

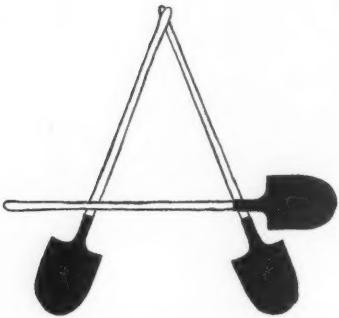
ARCHAEOLOGY



Spring 1949

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IMPORTANT NOTICE

Economies in assembling, printing, and distributing ARCHAEOLOGY which were not anticipated in 1947, when the decision to launch the magazine was made, have made it possible to lower the price of subscriptions.

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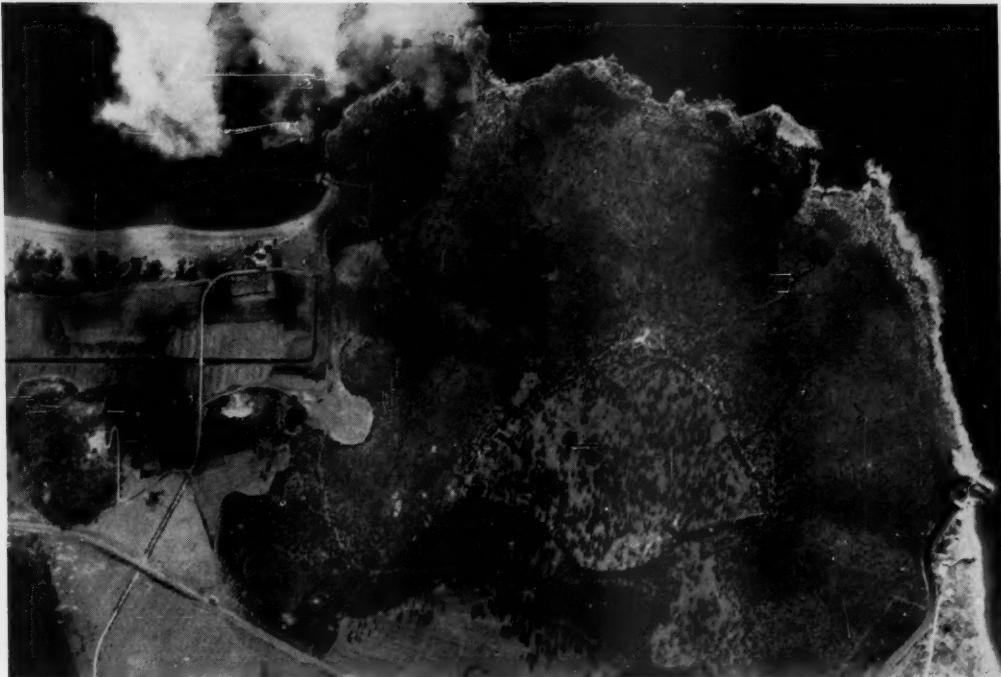




Eighty-five miles up the Tuscan coast from Rome, and just south of the landlocked lagoon of Orbetello, the hill of Ansedonia juts into the Mediterranean. On its summit, in Etruscan times, lay Cusi, guarding the port of the inland city of Vulci. Here, following the subjection of Vulci, rose in 273 B.C. the Latin fortress colony of Cosa, symbol and warden of Rome's dominance.

The rich fisheries of the lagoon of Orbetello have existed from time immemorial. In recent years its shallow and unruffled waters have formed an ideal seaplane basin, the object of constant scrutiny and attack by allied fliers during the crucial stages of the late war in Italy. In May, 1944, on one such mission, an American observer at the prudent altitude of 26,500 feet snapped the photograph reproduced above.

In left center, jutting out into the lagoon, lies the peninsula on whose tip is the town of Orbetello, with its great hangars. At the extreme left is the mountain peninsula of Argentario, connected to the mainland by the two curving sandbars which enclose the lagoon. The Mediterranean appears at upper left and bottom. At lower right is Ansedonia.



Another reconnaissance photograph taken during the same period shows Ansedonia by itself. Clearly visible at left center, sharply outlined by its walls, is the Roman colony of Cosa, now given over to sheep and wild olives. At the south corner of the town is the walled height of its arx or citadel, with the remains of a large temple; the conspicuous white structure beside it is the barracks of an Italian anti-aircraft unit. From the walls, rocky slopes fall away on all sides. The ancient roads which led down from two north gates, and from a postern gate of the arx, appear as irregular white ribbons. At the foot of the east slope lay the ancient port, now silted up, drained by a canal, and sown to grain.

COSA: EXPLORATION IN ETRURIA

By Frank E. Brown

Frank Edward Brown, a native of Illinois, a graduate of Carleton College (A.B., 1929) and Yale University (Ph.D., 1938) and a former Fellow of the American Academy in Rome (1931-33), is a veteran of Yale's memorable excavations at Dura-Europos. During the war he served with the State Department in Syria, and at the end of hostilities resigned to become Director-General of Antiquities in Syria. Since 1946 he has been professor in charge of the School of Classical Studies of the American Academy in Rome. Publication of this article was aided by the Colt Archaeological Institute, which bore part of the expense of the engravings.

IN THE AMERICAN ACADEMY IN ROME SCHOLARS and creative artists live and work side by side on the problems and under the influence of the living past. The School of Classical Studies provides a place for older and younger students to pursue individual research, to steep themselves in the concentrated culture of the

ancient world and to form themselves as scholars and teachers. To its organized lectures and trips to ancient sites there was added last year a new form of activity.

Its aim was to bring Fellows to grips with the material culture of antiquity, to give them the most varied archaeological experience possible



The view eastward from the arx of Cosa embraces the rich plain of the Tuscan Maremma. The dark area occupying the entire center of the picture was once a long lagoon, like that of Orbetello to the west. The ancient seaport lay at the foot of the foreground slope.



Ancient engineers hewed, in the solid rock of the hillside, this emissary from the lagoon to the sea, still used as the outlet of the modern drainage canal.

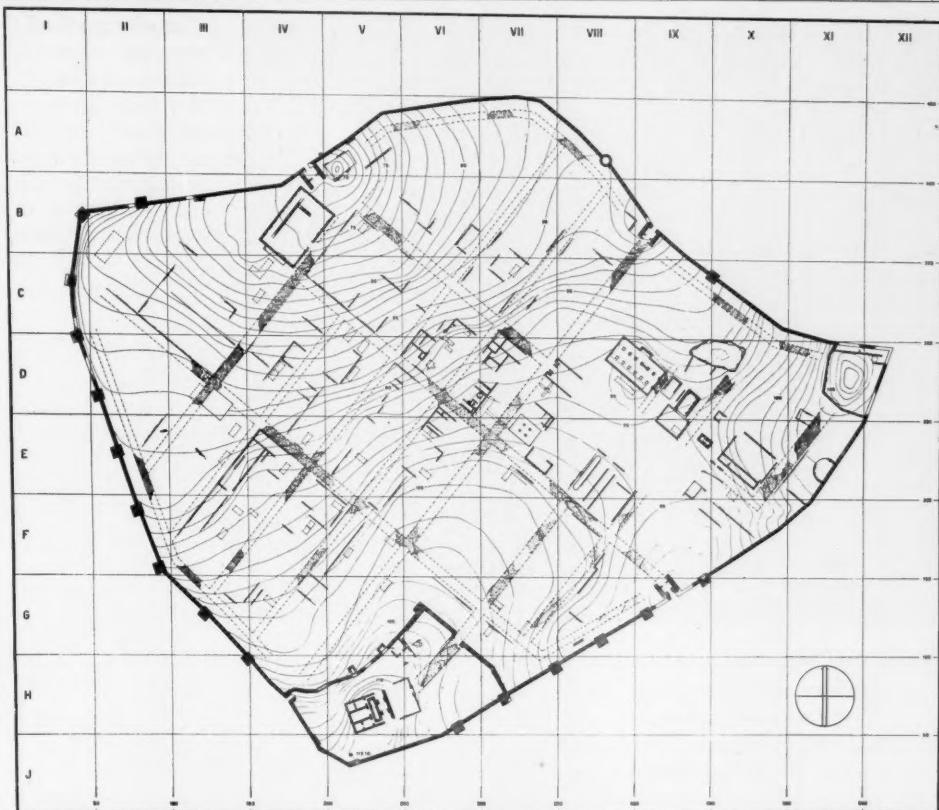
and to create a focus and field for the abilities of younger scholars. Its form was an excavation. By field work in Italian archaeology the Academy might make its most significant contribution to our knowledge of ancient Italy. No other training could so well sharpen the judgments of men and women, who in their future careers would be more and more required to handle archaeological material.

The time was ripe and propitious. The war had brought the Italian government to a better appreciation of the mutual advantages to be gained by sharing the investigation of Italy's great past with foreign scholars. In no field of research were these advantages more obvious than that of archaeology. The Academy's request for permission to excavate was sympathetically received and speedily granted. With similar enlightened cordiality the owners of the site selected placed their land and other facilities at our disposal. The site was the hill of Ansedonia, on the top of which lay the ruins of the ancient city of Cosa.

Cosa was carefully chosen both with regard to the central problem, which we wished to attack by excavation, and with an eye to the optimum physical conditions. The problem was that of the Etruscan city and its formative influence on the development of urban culture, a problem of crucial importance for the understanding of

Roman civilization only to be solved by thorough study of an Etruscan and early Roman city. We required, then, an Etruscan city which had lived on into Roman times. The desired physical conditions were four. First, that our city site lie in the heart of ancient Etruria. Second, that it be small enough in compass to be comprehended as a whole, as a complete organism, in a foreseeable number of campaigns of excavation. Third, that it be at the same time large enough to possess all the normal organs of civic life, and thus yield us a full and typical sample. Fourth, that it be well preserved and hitherto unexplored.

Cosa seemed to fill the bill. It was of well attested Etruscan origin, with a recorded history in Roman times. It lay near the very middle of the Etruscan coast, near the great centers of Vetulonia, Rusellae, Vulci, and Tarquinia. Its modest area of some $33\frac{1}{8}$ acres, together with its obviously complete articulation with walls, gates, streets, Arx, Forum, temples, public buildings and private dwellings gave us the compactness we desired. Its surface remains were remarkably well preserved, and had never been scientifically explored or excavated.



Deserted by its inhabitants at the beginning of our era, Cosa escaped the building operations of imperial and mediaeval times. In addition to the well preserved fortifications, the remains of streets and buildings of the second and first centuries B.C. can be traced on the surface of the ground. Surveyed and plotted during the exploratory campaign of May and June, 1948, they yield the plan of the first Roman colony established in Etruscan territory, the earliest Roman town plan known to modern scholarship. Note the city wall with its square towers and three gates, the separately fortified arx with its Capitolium and postern gate, and the rectangular block plan based on the broad paved streets which lead to the gates and enclose or end at the forum. Building walls now visible on the surface are represented in solid black. Note also the oriented and leveled 50-meter grid which forms the basis of the survey, and on which future excavations will be plotted.

Work began on May 1, 1948, under the direction of the writer, and continued until June 18. The regular members of the staff were the Academy Fellows, DORIS TAYLOR, ROBERT HECHT and LAWRENCE RICHARDSON. Other Fellows of the Classical School, Drs. CHARLOTTE GOODFELLOW, LOIS WILLIAMS and WILLIAM TONGUE came to the excavations from week to week to observe and assist. The seven-weeks campaign fell into three phases. During the first three weeks two survey teams plotted, measured, drew and photographed all the visible surface remains.

During the second three weeks all hands worked at the trial excavation of the Capitolium. The final week was devoted to cleaning up, photography, study and preparation of finds, completion of records, etc.

Long before the actual start of work our preparations were under way. Equipment of all sorts was assembled. Ancient sources and modern descriptions were collected and digested. Professional surveyors under our supervision laid down the 50-meter grid, marked by stakes levelled and set in concrete, which was to form the basis of



The city wall of Cosa, built soon after the colonial foundation of 273 B.C., is made of native limestone laid in great polygonal blocks. Six to seven feet thick at the top, it stands today in several places to a height of over twenty feet.

our exploration. That exploration, as it progressed, rapidly revealed the main outlines of the structure of the ancient town.

As our workmen hacked away the tangled brush and wild olive growth, the principal streets and buildings, the broad divisions of the city became clear. Close study made it possible to identify certain structures, temples, a basilica, a bath, reservoirs and cisterns, private houses. A city of the last two centuries of the Republic took shape under our eyes. The Arx with its Capitolium provided the obvious starting point for test excavations. The Capitolium's outer walls still stood in part over twenty feet high. It was cleared to the level of its original floors, and a trial section was cut through the paving of the central cella. Time was also found to sink trenches at two significant points along the town and Arx walls and to sift the interior fill of the walls themselves.

Meanwhile Cosa's diggers lived comfortably in a newly finished villa on the cliffs above the sea. A second villa nearby housed our cook's family and served as our dining room. Both were generously lent to us before occupation by their owners.

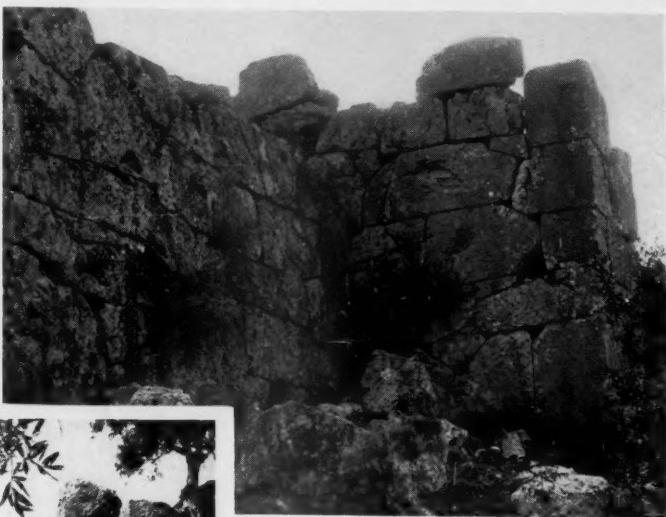
As seen from within the city, the inner face of Cosa's wall is found to be of rough "cyclopean" construction, in sharp contrast to the highly finished outer face.

A former anti-aircraft barracks beside the Capitolium was re-roofed to make an admirable work and store house. Our twenty-odd workmen bicycled in daily from nearby Orbetello and the surrounding countryside. Some had excavated before under the Assistente assigned to us by the Soprintendenza in Florence. He was a veteran and seasoned excavator, a valued addition to our little group. Liaison with the Soprintendenza was assured by an Inspector, whose periodic visits brought us counsel and encouragement.

The Spring campaign of 1949 will begin with the complete excavation of an important building together with the adjacent portion of the city wall.



Right: The square towers of the west and south fronts represent an attempt to combine with the traditional Italic polygonal curtain the latest developments in contemporary military architecture in ashlar masonry. The experiment at Cosa was only partially successful and was not repeated; elsewhere they continued to build polygonal circuits without towers, or walls of ashlar, brick, or rubble work with towers.



Left: The northeast gate is the best preserved of the three. Its outer opening was barred by a portcullis, while doors closed the passageway within.



Right: Inside the northwest gate stands the massive polygonal podium of one of Cosa's three main temples.



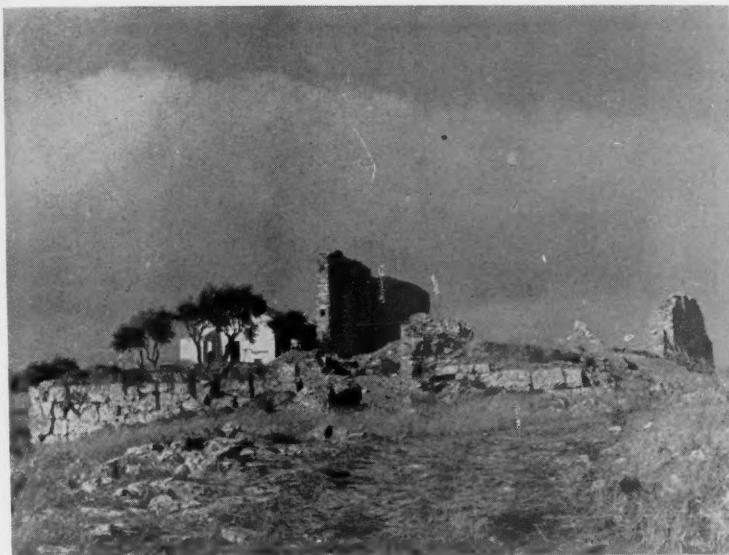
Left: Seen from the arx, the forum of Cosa appears as a flat olive-dotted plain. Behind it rises the eastern height, once crowned by a temple. In the foreground appears the paving of the Via Sacra which mounted from the forum to the Capitolium.



Right: A monumental arch was erected by Caesar or Augustus to mark the entrance to Cosa's forum. In its ruins are clearly visible the two narrow side passages and the springing of the great central passage.



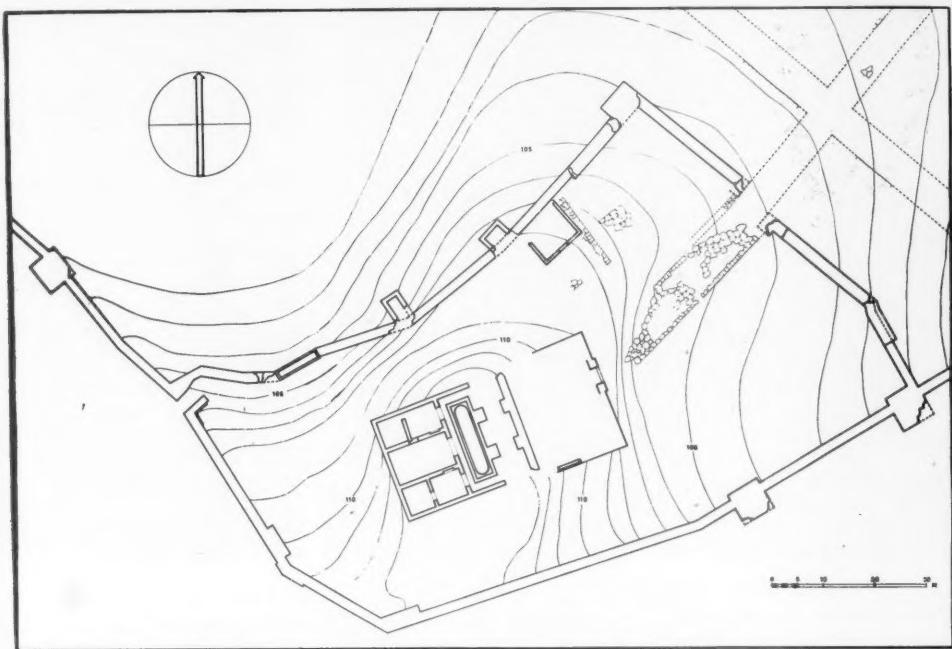
Left: Chief of the buildings along the northeast side of the forum was the basilica, whose foundations may be recognized on the city plan. Its construction of roughly-worked limestone blocks set in lime mortar is typical of the majority of republican buildings at Cosa. The wall of its exedra-like tribunal stands to a height of some nineteen feet; the opening here visible is what survives of a large ancient window.



Left: To one approaching up the Via Sacra, the Capitolium of Cosa presents the massive trapezoidal masonry of the podium and of its forecourt with its once arched portal. Beyond rise the outer walls of the cellas. The anti-aircraft barracks at the left have been converted to serve as work- and storerooms for the archaeologists. **Right:** The anta of the south cella wall still stands almost to its original height of some twenty-six feet. The rectangular recesses are the sockets in which were probably set the wooden rails of the grill-work fencing in the porch.



Left: Beneath the floor of the porch of the Capitolium a capacious cistern was hewn in the native rock of the hilltop. Its walls and vault were built almost entirely of broken terracotta revetments from an earlier temple of the fourth or third century B.C. This temple cistern strikingly illustrates the dependence of the inhabitants of this waterless hilltop on rainwater carefully caught and stored. **Right:** A trial section carried through the ancient floor of the central cella is visible in the right foreground. Beyond it, the original partition wall is patched with a mediaeval repair. In the background, the wall of the cella of Juno still retains areas of its original moulded plaster decoration, in the first Pompeian style.



The surface remains of the arx of Cosa are delineated in the plan above, which shows mediaeval as well as classical constructions. The plan below, based on the study and partial excavation of the remains, shows arx and Capitolium as they existed in the first century B.C. The Capitolium with its traditional three cellas is of Vitruvian proportions. Its open forecourt once enclosed the altar. From the forum to the arx and on to the temple gateway leads the paved Via Sacra.

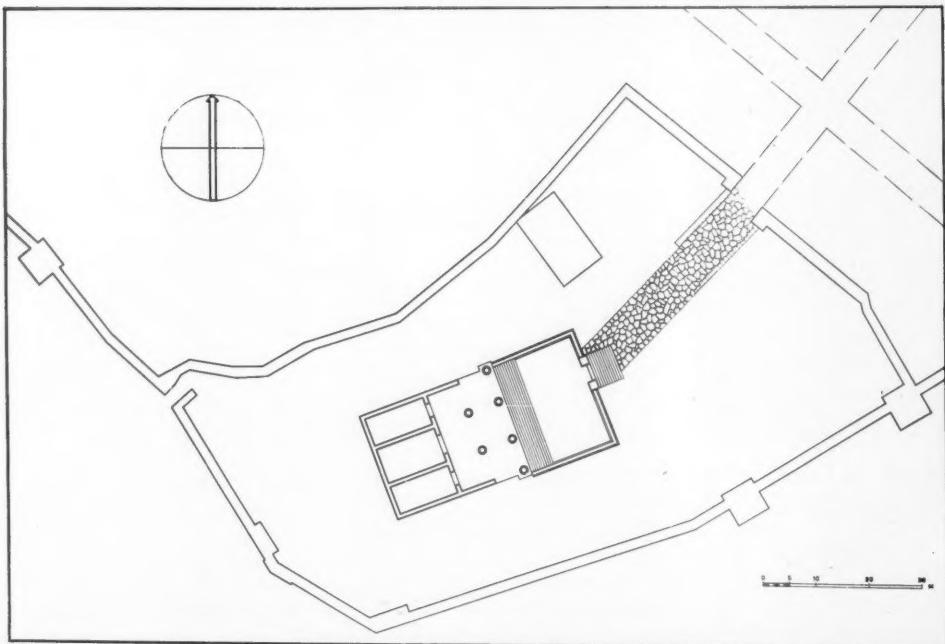


FIG. 1. Great stupa of Shevaki, near Kabul. Kushan period.



ARCHAEOLOGY IN AFGHANISTAN WORK OF THE FRENCH ARCHAEOLOGICAL DELEGATION

By Daniel Schlumberger*

Director of the French Archaeological Delegation in Afghanistan

THE ANCIENT ARCHAEOLOGY OF AFGHANISTAN is essentially Buddhist. Buddhism, born in the closed world of the Indian sub-continent, could escape from there to gain the vaster fields of action of the continent of Asia only by way of the Afghan mountains. That is what it did at the beginning of the Christian era, at a time when a great empire, that of the Kushans—whose sovereigns had just been converted to the new faith—united under a single rule both northwest India, already Buddhist, and Central Asia, still pagan.

All the ancient ruins which survive in Afghanistan (FIGURES 1 and 2) are witnesses of this great epoch of Buddhist expansion, which impressed upon this country a monumental imprint as deep and as durable as that with which the Roman epoch marked western Europe. These are the ruins made known in the second half of the nineteenth century by a few hardy European travelers who were the pioneers of Afghan archaeology. To

their study the French Archaeological Delegation dedicated itself when Afghanistan, abandoning in 1922 its long, harsh isolation, entrusted the exploration of the ancient remains of the country to this organization.

These ruins extend all along the route which the Buddhist expansion followed toward the north, across the Hindu Kush. This route has three sections.

In one section, the monasteries of Hadda, in the immediate vicinity of Jelalabad, had already yielded many treasures to the nineteenth-century explorers. The Archaeological Delegation conducted there further excavations, astonishingly fruitful. The chapels of these convents were decorated with large compositions—usually very perishable, because they were modeled in earth—but of which certain parts, particularly the heads, were sculptured in stucco (FIGURE 3). The French excavators gathered thousands of stucco heads: Serene Buddhas and grimacing demons, turbanned Bodhisattvas and helmeted soldiers

* Translated by J. J.



FIG. 2. The "Wheel Column" (Minar Shakri), near Kabul. Kushan period.

of the army of Evil, ascetics and monks with shaven heads, and benefactors of various racial origins, distinguishable by their headdresses. The National Afghan Museum in Kabul, and the Guimet Museum in Paris own unique collections of these heads, of unequal artistic quality but of inestimable documentary value. In addition, the site of Hadda produced an interesting series of bas-reliefs of schist.

In another section of the route, Bamiyan had been known only by accounts and sketches of a few nineteenth-century travelers. From 1928 to 1930 M. HACKIN devoted himself to the exploration of numerous cells and caves dug here and there in the cliffs; fragments of Sanskrit manuscripts were found there. Above all, he concentrated on a detailed study of two colossal statues (FIGURE 4) and of significant remains of frescoes which still survive on the walls and vaults of their niches.

Begram

In the third section, M. HACKIN began work in 1936 on the royal villa, so called, of Kapiça, the present Begram Kohistan near Sharikar, and on the religious constructions of the vicinity. These latter furnished new deposits of Buddhist religious art. Let it suffice for me to mention the monastery of Shotorak, excavated a little before the war by M. J. MEUNIE, which yielded a new series of bas-reliefs of schist (FIGURE 5). But in the royal villa, above all, M. HACKIN made

an extraordinary discovery, a real storehouse of objets d'art.

Side by side with the local arts, this find suddenly reveals to us artistic productions imported from elsewhere. Along with religious art, it furnishes us with examples of the profane luxuries of the ruling classes. It recalls to me in its components certain treasures of churches or monasteries of the great mediaeval commercial or pilgrimage roads in the West: Those, for example, of the Cathedral of Sens or of the abbey of St.-Maurice en Valais, where next to the chalices and cups are examples of the secular arts of distant lands; Moslem fabrics from Egypt, Byzantine silks, and Sassanian gold vessels. But if these mediaeval treasures bear testimony of the links between Latin Europe and the Mohammedan and Byzantine Orient, how much more vast the horizon which the Begram treasure offers us. It is the horizon of the whole of Asia!

Because there we have found, tossed together in two rooms, objects from India, from China,



FIG. 3. Stucco head from Hadda, near Jelalabad. Musée Guimet, Paris.



FIG. 4 (above): The "Great Buddha" of Bamiyan (height, 53 meters) in its frescoed rock niche.

FIG. 5 (above, right): Adoration of the Buddha by the three Kasyapa brothers. Fragment of a bas-relief of schist from Shotorak near Begram. Musée Guimet, Paris.

FIG. 6 (right): Small ivory plaque, Triton strangling two sea monsters, from Begram. Kabul Museum.

FIG. 7 (below, left): Small ivory plaque, girl with goose, from Begram. Kabul Museum.

FIG. 8 (below, center): Small ivory plaques, female figures, from Begram. Musée Guimet, Paris.

FIG. 9 (below, right): Ivory statuette from Begram. Kabul Museum.





FIG. 10. Greco-Roman medallion in plaster, from Begram. Kabul Museum.

and from the Mediterranean: Small plaques of ivory (FIGURES 6 to 9), imported from that central India whence Buddhism had come, which restore to us a branch of ancient Indian art which one would have believed lost forever; vases coming from that part of China which Buddhism was already reaching by the silk route, a road which these objects must have followed in the opposite direction; and finally a varied collection of objects of classical Greco-Roman art, among which must be mentioned particularly an admirable series of medallions of sculptured plaster (FIGURE 10), Greco-Egyptian bronzes (FIGURE 11), and glass vessels with painted or moulded decoration, one with a scene from the Iliad.

No discovery could illustrate in more striking fashion the role which ancient Afghanistan played as the crossroads of Asia.

Post-War Resumption

When in 1946 the present writer was directed by the French government to take up again the work of the Archaeological Delegation—doubly interrupted during the war by the disappearance of M. HACKIN, who died for Liberty in 1941, then by the halting of M. GHIRSHMAN's work in

1943—the first question which arose was whether it would be possible to find other than Buddhist archaeological remains in Afghanistan. Without hoping that Alexander, that meteor, had left material traces of his passage through Afghanistan, it was reasonable to look after him, for those of his successors, Seleucids, Bactrians, Parthians, Sacians; before him, for those of his Achaemenid predecessors; and finally, before all the traces of the historic period, for those of a prolonged pre-history of capital importance.

Two attempts had already been made in this direction: One at Bactrae, by M. FOUCHER, from 1922 to 1925, the other in Seistan, in 1936, by M. HACKIN, assisted by M. GHIRSHMAN. The results had been very poor. Five months of excavation in Bactrae in 1947, under my direction, produced nothing more encouraging. This campaign served above all to show that this celebrated site is covered everywhere with a thick layer of Islamic debris, and that at many, if not at all points, these deposits rest directly on the virgin soil. Ancient Bactrae remains to be discovered. In the spring of 1948 the surface examination of a series of



FIG. 11. Heracles-Serapis, Greco-Roman bronze of Egyptian origin, found at Begram. Kabul Museum.

FIG. 12. The monastery of Kama Dacca after the 1948 excavations.



mounds of Bactriana, under the direction of M. MARC LE BERRE, gave a similar result: The ancient levels, if they exist, are concealed under the heavy Mohammedan deposits evident everywhere.

Meanwhile, if our hope of discoveries older than the Buddhist period was not fulfilled, two important chance finds of antiquities going back to that period have just offered interesting material for our study. The first, made in May, 1947, at Mir Zakah in the province of Gardez, is a very rich hoard of coins. These are Indo-Greek and

Indian issues, mainly of silver, ranging from the second century B.C. to the third century A.D., the period when the treasure must have been buried. Thanks to the prompt and effective intervention of the Afghan government, 9600 coins of this hoard were withheld from dispersion and have been deposited at the Museum of Kabul. In June of 1948, the Archaeological Delegation was authorized to work in this out-of-the-way region: The place of find was excavated, under the direction of M. LE BERRE, and 400 more coins were recovered.



FIG. 13 (left): Stucco head from Kama Dacca, 1948. FIG. 14 (center): Stucco head during excavation, Kama Dacca, 1948. FIG. 15 (right): Plaque of schist representing the footprint of Buddha, originally gilded. From Kama Dacca, 1948. Note the swastika on each toe.

The second chance discovery was that of a Buddhist monastery at Kama Dacca, not far from the celebrated Khyber Pass. The excavation of this site, done in March, 1948, by M. LE BERRE, has brought to light a little monastery (FIGURE 12) very much like those in the vicinity of Taxila,

and has yielded traces of sculptures in stucco (FIGURES 13 and 14) and in schist (FIGURE 15), closely related to those of Hadda.

The excavation of an Islamic site near Qala-i-Bost, near Kandahar, is planned for this spring.

The excavations of M. BARTHOUX at Hadda, the researches of M. HACKIN at Bamiyan, part of the Begram treasure (first campaign, 1937), the excavations of M. MEUNIE at Shotorak and of M. GHIRSHMAN at Begram, various minor excavations, and an important study of M. A. FOUCHER on the road from Bactrae to Taxila, were published between 1928 and 1946 in the *Mémoires de la*

Délégation Archéologique en Afghanistan. The publication of the rest of the Begram treasure (second campaign, 1939-40), a summary report of the excavations of Bactrae (1947), an inventory of the coins of Mir-Zakah, and a report of the excavation of Kama Dacca (1948), are in preparation.

D.S.

For an Historian and Archaeologist

No space can call you resident, nor time
 Claim you a citizen, who lightly tread
 Dark-storied steps of buried lands, and climb
 The high-walled centuries that guard the dead;
 For whom the Nile has paused, rolled back its years,
 To flow again beneath a pharaoh's sail,
 For whom a deaf Arcadian forest hears
 Again the pagan pipes, the Bacchic wail;
 Who in the midst of fading tongues have found
 A radiant company to sit among:
 Addressed by Plato, charmed by that lost sound
 Of Homer's solemn music played and sung.
 And we who cannot see past each day's night
 Shall look to you who have all time in sight.

G.A.W.

June, 1948.

Agora Excavations, 1932.
Work in progress to the
northeast of the Hephaisteion. The arrow points to
the location of the well in
which the bronze Nike head
was found.



The fifth-century bronze head of Nike, from the Agora excavations, before final cleaning.

HEAD OF NIKE FROM THE ATHENIAN AGORA

By Homer A. Thompson

IN FEBRUARY, 1932, A LOATHESOME MASS OF heavily incrusted metal was lifted from a well along the west side of the ancient market square of Athens, a stone's throw to the east of the Hephaisteion ("Theseum"). The pick, striking through the corrosion, drew a gleam from the metal and the excited Greek workman announced his find as a head of gold. He came closer to the truth than the supervising archaeologist at first believed.

After a month's immersion in a beauty bath of caustic soda the object emerged as a youthful head about one-half life size. That the head belonged to a figure of the winged goddess of victory, Nike, is shown by two considerations. In the first place she wore her hair short, drawn up to the middle of the crown from all sides and tied with a ribbon, the ends rising loose like a flame; the hair above the ribbon was cast in a separate piece that has long since become detached from its peg and lost. This coiffure was most



Three views of the bronze head of Nike: Left, right side before final cleaning. Center, right side as cleaned, showing grooves referred to in the text. Right, view of the back.

commonly worn by Nike, the messenger goddess, who had constantly to fly down from heaven to announce the decisions of the gods. Secondly, the present outline of the bust indicates the original throat-line of the goddess' garment. With the loose-fitting dress of the time, her shoulder straps could have been kept thus close to the neck only with the support of wings.

The clean-cut beauty of the profile, the modelling of the hair, the slightly superior expression indicate for our Nike a date very close to the Parthenon frieze, say in the 30's of the fifth century B.C.

The further history of the Nike is to be read from the scars that so disfigure head and neck. They consist of two series of channels, each of which encircled the head at the hair-line, criss-crossed the crown, and ran down the neck. One set of the channels, obviously the earlier, had at some time been carefully packed with bronze; the other set is still open. At several points in the bottom of these open trenches careful cleaning revealed tiny particles of heavy sheet gold separated from the bronze by a sheet of silver. There can be no doubt that the head was once covered with a double layer of the two precious metals, laid on in segments, hammered and pressed into shape over the bronze core; the edges were then turned and keyed in the channels, so that the

head, and no doubt the whole statue, must have appeared to be all of gold. Not once but twice was this done, as shown by the duplication of the channels.

We know from Thucydides and from contemporary inscriptions that the fifth-century Athenians, in the heyday of their empire, had very sensibly employed their gold reserve by applying it in thick sheets over the dress of their patron goddess Athena in her temple, the Parthenon, and over certain statues of Nike, likewise kept on the Acropolis. In this form the gold was available for the enjoyment of all the people, and, housed in the temple, was as safe as could be from pilfering.

Then came the Peloponnesian War. Toward its end, as the state became financially exhausted, the Athenians stripped off the gold from their statues and melted it into coins. This, then, will have been the occasion when our head lost its first covering. The care with which the channels were packed with bronze indicates both the despair of the Athenians for their worldly future and their abiding regard for a thing of beauty.

In the course of the fourth century, with the return of peace and by dint of careful economy, the Athenians recovered their financial position to the point where they could once more clothe their goddesses in gold, ours among the rest.

Then, at the turn of the fourth and third centuries, Athens became embroiled in power politics. In the course of a long and bitter siege by a Macedonian army the citizens, or rather the general Lachares who was the strong man of the hour, were driven once more to gather the sinews of war from the forms of their goddesses. Athena, as a contemporary historian remarked, was left naked, and so, too, were the Nikai. This then

was the occasion of the final spoliation of our head. The well in which it was found had been filled up in the early third century B.C. It is indicative of the confusion that reigned in the city at the time that in the filling of the well along with the bronze head appeared the skeleton of a man. And it is symptomatic of the change in values that the old and lovely head, because now stripped of its gold, was no longer counted worth keeping.

THE CORROSION AND CLEANING OF ANCIENT BRONZES

By Marie Farnsworth

ARCHAEOLOGICAL BRONZES, ALTHOUGH THEY probably had a bright metallic surface when first made, more often resemble a mass of dirt when dug up. Aside from a few metals such as gold, all metals revert in time to minerals similar to those from which they were first formed. How long the metal lasts depends both on the type of metal and its environment. Museum bronzes, for example, under certain conditions appear almost indestructible, while under other conditions they develop a malignant patina or bronze disease and rapidly disintegrate. At the very least, ancient bronzes buried in the soil for long periods of time have undergone surface oxidation and have reverted to a certain extent to the original mineral form. More often a thick mineral layer, more or less admixed with extraneous dirt, has formed on the surface. Under unfavorable circumstances the original metal may have entirely disappeared, i. e., it may have been transformed completely into tin and copper salts. In this event the object is irretrievably lost.

A number of forces unite to bring about this oxidation or corrosion, the oxygen and carbon dioxide of the air, the water, salts and organic acids of the soil, as well as the varying constituents and metallic structure of the bronze itself. It is now generally believed that the process of corrosion is essentially electro-chemical, i. e., one or many electrolytic cells are formed between the more noble or positive areas and the less noble or negative areas of the metal with corrosion resulting from the chemical changes which take place in such cells. Water, of course, is an essential con-

stituent, and thus a dry soil is less corrosive than a wet one. The electro-chemical nature of corrosion was well illustrated in a Mycenaean copper pan found at the Agora. This object was essentially intact and almost as bright as the day it was made except for occasional holes where localized impurities had allowed small electrolytic cells to be set up with resulting corrosion and disintegration.

The surface appearance of buried bronze objects varies considerably. Unfortunately, especially in Greece, the patina or mineralized surface is often rough and unsightly in appearance and must be destroyed. Apart from the appearance, chlorides, which are particularly harmful to bronze, are usually present and must be completely removed. In many cases this complete removal of harmful constituents involves complete destruction of the patina. The chemical nature of the patina varies widely according to the conditions under which it was formed. Nearly a dozen different copper compounds (oxides, carbonates, chlorides, sulfides and silicates) have been recognized by Professor FINK of Columbia University. In addition lead, tin, and iron compounds have also been found. If at times it is expedient to remove the patina, there are other cases where, if the object has the especially prized, so-called noble patina, it is necessary to remove the overlying dirt without removing the patina.

This noble patina is generally green, with bluish and grayish tints. If lead is present, it may be gray, brown or black. The green color is usually due to malachite, a basic carbonate of copper.



Bronze figurine of a horseman found on the North Slope of the Acropolis, before and after laboratory cleaning. Note inscription revealed by the removal of corrosive deposits.

The blue is azurite, also a basic carbonate of copper which is not so stable as malachite and tends to change into the more stable green compound. The patina found on modern objects exposed to industrial or urban atmospheres is principally basic sulfate, which is also green in color.

Fortunately, the noble patina is dense and closely adhering. It has little calcareous dirt mixed in with it and does not dissolve readily in mild reagents. In order to remove this noble patina, it is necessary to reduce it back to the parent metal or dissolve it in such strong reagents as mineral acids. On the other hand, many less desirable patinas are rough and warty in appearance. The copper compounds formed by corrosion are mixed with calcareous dirt which dissolves in reagents which do not dissolve the compounds themselves. The copper compounds, however, fall off when the calcareous dirt which is holding them in place is dissolved.

Since we have discussed the cause and the nature of the patina found on archaeological bronzes, it is now possible to consider methods of removing it in its entirety or of removing its less desirable constituents. These methods, in general, fall into three classes: solution, reduction and mechanical removal. The mildest and least harmful solvent is water; a more effective but equally harmless solvent is sodium metaphosphate; acids, particularly mineral acids, which are stronger in their solvent action, are more likely to do harm. It can be ex-

plicitly stated that hydrochloric acid, because of the corrosive action of chlorides on bronze, should never be used. Reduction can either be electrochemical or electrolytic. In either case the reagents commonly used are zinc and sodium hydroxide, although sometimes sulfuric acid is substituted for the hydroxide. This reduction is the exact reverse of the process of corrosion; metal is again produced but in a finely divided state.

To be specific, sodium metaphosphate, a mild solvent commonly used in cleaning bronze, has the property of forming stable soluble complexes with calcium and magnesium ions, i. e., calcium and magnesium salts are soluble in it. The effect of metaphosphate on a patinated bronze depends both upon the strength and temperature of the solution used and upon the nature of the patina. A rough patina of basic copper salts with a fair amount of foreign material intermixed, often calcareous, is much more soluble than a smooth, hard patina, particularly one containing much tin oxide. Objects with a good patina have been successfully cleaned of foreign dirt, leaving the surface otherwise practically untouched. On the other hand, prolonged soaking, especially in a hot concentrated solution of metaphosphate, will remove part, if not all, of the patina. In the same manner, reduction, if sufficiently prolonged, definitely removes the patina. Finally, the finely divided metal produced by reduction or the patina which has been softened by the action of solvents is re-

moved by brushing and it is very important to remove all chemicals, especially chlorides, by a final thorough washing in clean water.

The cleaning of the Agora bronze head has been described by Professor SHEAR in *Hesperia*, II (1933) pages 519 ff., as follows: "At a depth of three metres the bronze head was lying face downward in the mud. After a preliminary rinsing with water the head appeared as it is shown in Fig. 5. The surface is covered with a thick layer of corrosion which conceals all details of the workmanship, and in which some pebbles of considerable size are imbedded. Although it was at once obvious that a beautiful and important work had been secured its quality could not be evaluated from the deformed mass of metal in hand. As the first step in the cleaning process the head was allowed to soak in distilled water, whence it was taken only for occasional brushings. After five weeks of this treatment much superficial accretion had been removed, but some hard corrosion still remained which did not yield to the soluble action of the water. The head was, therefore, wrapped in zinc plate and placed in a solution (about 2%) of sodium hydroxide. It was left in this bath, which was frequently renewed, for nearly two months, when the corrosion had been entirely removed and the original bronze surface was revealed." It can be seen that the cleaning of this bronze follows the procedures outlined above, namely, solvent action and electro-chemical reduction with some mechanical assistance. At this time the solvent action of sodium metaphosphate had not been brought to the attention of archaeologists. Its use would have accelerated and improved the first part of the cleaning process.*

What then is the final appearance of cleaned bronzes? If only the surface dirt is removed and the patina is allowed to remain, the object is usually green, sometimes with bluish or grayish tints or even entirely black. Its appearance, if the patina is removed, depends upon the composition of the bronze itself, the type of cleaning employed and the type of brush used. If some of

the finely divided reduced metal remains on the roughened surface, it tends to darken it. It is possible to polish the bronze to its original bright appearance or even to give it a higher degree of polish than was originally present but this is obviously, in most cases, not desirable. Even if a



The chemistry laboratory at the Agora Excavation headquarters.

bright surface is produced by the cleaning process, it does not last long but inevitably becomes dull after a short time because of surface corrosion, which can also be hastened by relatively harmless chemical means. The aim in cleaning ancient bronzes, where it is necessary to remove the patina, should be to restore the object as nearly as possible to its original appearance. This does not mean an object with a heavy green patina which is the result of long exposure but which, nevertheless, can be produced in a much shorter time by chemical means, and neither does it mean a surface resembling a bright new penny; but rather the slightly dull appearance of metal in everyday use.

* Under the trade name "Calgon," intended primarily as a water softener, sodium metaphosphate is available in grocery stores.



FIG. 1. General view of the rock-shelter of La Colombière, showing the Late Pleistocene terraces of the Ain Valley in the vicinity of Poncin. The site, which is 46.00 meters long and some 12.00 meters wide, faces due south and directly overlooks the Ain River.

PEABODY MUSEUM
HARVARD UNIVERSITY
EASTERN FRANCE
EXPEDITION, 1948

EXCAVATIONS AT THE PREHISTORIC ROCK-SHELTER OF LA COLOMBIÈRE

By Hallam L. Movius, Jr.

A native of Newton, Massachusetts, and a graduate of Harvard (L.S., 1930; Ph.D., 1937), Hallam L. Movius, Jr., has taken part in field expeditions to Central Europe, Palestine, Ireland, Southeast Asia, and France, taught anthropology at Harvard, and held the assistant curatorship of the Peabody Museum. During World War II he served for four years with the U. S. A. A. F. He is now Curator of Palaeolithic Archaeology at the Peabody Museum. Last summer he dug in France, with results here summarized.

Introduction

THE PRIMARY OBJECTIVE OF THE EXPEDITION sent out in 1948 by the Peabody Museum of Harvard University to Eastern France was to attempt to date the time when an Upper Palaeolithic locality in the Southern Jura region was occupied by our Stone Age ancestors. This problem, fundamental to the establishment of a reliable chronology for the classic sequence of Old Stone Age cultures in Western Europe in terms of the advances and retreats of the Alpine glaciers (see chart, page 25), was approached by means of combined archaeological and geological field-work.

The dating of archaeological deposits by means of geology is based on a detailed study of stratified layers of sand and gravel which were laid

down by the action of rivers flowing from the glaciated regions. These sand and gravel deposits were built up into the form of terraces by the waters which flowed from the glaciers. The latter pushed thousands of tons of debris—called moraines—ahead of them, and during the warm seasons of the year, when the ice was melting, there was an abundant supply of this material piled up at or near the edge of the ice that was available for transport by the rivers. The rivers in turn carried this material away, and deposited it in the base of the valleys, through which they were flowing, in the form of terraces.

In order to find a locality where combined archaeological and geological field-work could be expected to furnish fresh facts bearing on the problem of Upper Palaeolithic chronology, it was

ACKNOWLEDGMENTS

On behalf of the expedition, it is my pleasure to take this opportunity of thanking Professor MARCEL THORAL, Director of the Laboratoire de Géologie, Faculté des Sciences de l'Université de Lyon, and Dr. JEAN VIRET, Director of the Muséum des Sciences Naturelles, Lyon, for their generous assistance and kind cooperation in connection with our investigations at La Colombière. It is also my privilege to thank Messrs. JOE E. CASON and RAYMOND H. THOMPSON, graduate students in the Department of Anthropology, Harvard University, for their expert help in deciphering the outlines of the animals engraved on the La Colombière pebble and reproduced on pages 28 and 29 of this article. — H. L. M., JR.

not necessary to conduct an extensive program of reconnaissance. Just before the first World War commenced, Dr. LUCIEN MAYET of the University of Lyon and M. JEAN PISSOT of Poncin (Ain) partially excavated the large rock-shelter of La Colombière.¹ This site (FIGURE 1) is located in the Department of Ain, some 45 miles northeast of Lyon and near the town of Poncin, in the valley of the Ain River (see map). It is in this region that the river emerges from the Jurassic limestone foothills of the Southern Jura onto the flat, marshy plains area, known as the Pays-de-Dombes.

Now, as may be clearly observed in several of the fine photographs published by MAYET and PISSOT, the basal deposits in the La Colombière rock-shelter consist of river-laid sands and gravels that form part of the 20- to 23-meter terrace of the Ain (FIGURE 2), which has a wide distribution in the region. Presumably during the warm months of the year, Upper Palaeolithic hunters moved into this section of the Ain Valley and

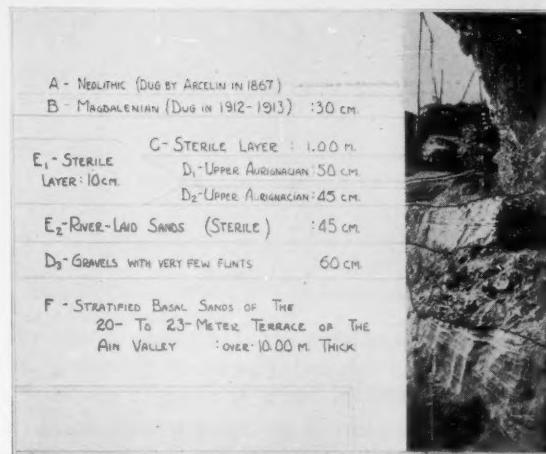
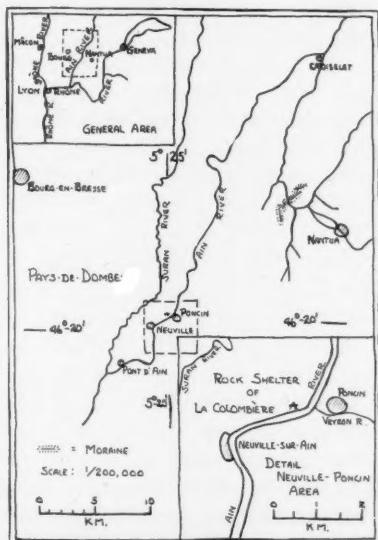


FIG. 2. La Colombière. Photograph taken by Dr. MAYET and M. PISSOT in April, 1913, showing the stratification revealed in a trench dug in the western end of the site.

actually camped on the surface of this terrace, which more than half fills up the area protected by the overhanging rock at La Colombière. They left behind various types of flint implements—knives, points, scrapers and engraving tools—as well as several objects with drawings of animals engraved on them, and the bones of the game they hunted.

These vestiges of a Stone Age occupation are found in direct association with extensive fire-hearths in the uppermost levels of the terrace referred to above. In other words, the earliest habitation layers at this site, which consist of two gravel horizons (D_1 and D_2 in FIGURE 2), are intimately and directly tied in with the final stages of deposition by the river. These so-called "D" layers in turn were separated from the overlying Magdalenian horizon² (indicated as B on the section) by a thick deposit of sterile sand, there having been no Solutrean occupation³ here.



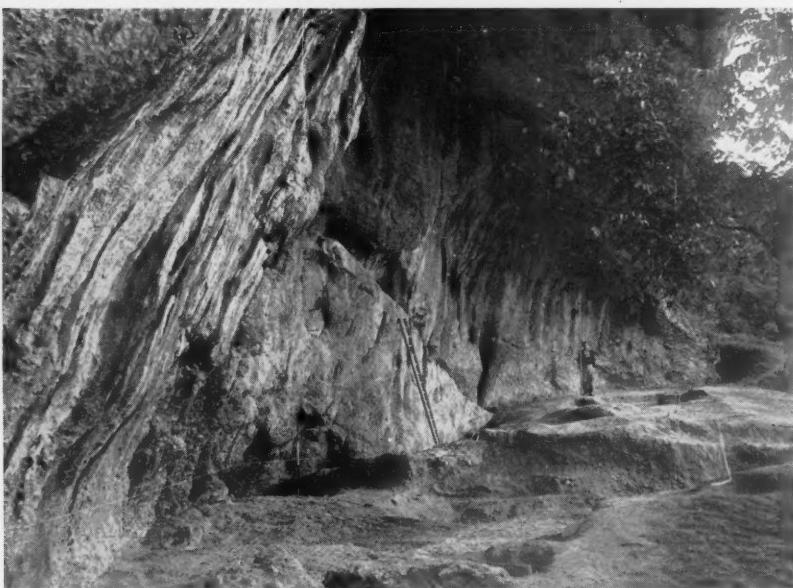


FIG. 3. La Colombière.
The site looking east, showing the undisturbed surface of the deposits after clearing. In the left foreground what appeared to be the top of a filled-in lower cave may be noted.

The two primary objectives of the 1948 expedition of the Peabody Museum of Harvard University to Eastern France, therefore, were:

- (a) To excavate the rock-shelter of La Colombière, near the town of Poncin (Ain); and
- (b) To investigate the extensively-developed Late Pleistocene terraces of the Ain Valley for the purpose of dating the main occupation layer at La Colombière in terms of the local glacial sequence.

Both of these objectives were successfully accomplished.

This work was made financially possible by a substantial grant from the Viking Fund of New York for which we are profoundly grateful. We would also like to take this opportunity of thanking the Commission of Historic Monuments, Ministry of National Education, Republic of France, which very generously gave its authorization for the expedition to undertake the excavation of La Colombière. This permission was granted to the writer under the same conditions as those normally established for French archaeologists.

Work of the 1948 Season

The excavations at the rock-shelter of La Colombière were begun on June 10th and completed on August 20th, 1948. In this ten-week period the remaining archaeological deposits at the site were completely dug, with the exception

of a test section approximately 2.00 meters square left at the request of Dr. FRANCK BOURDIER, Regional Director of Prehistoric Antiquities, and a small, apparently sterile area at the extreme eastern end of the shelter.

The personnel of the expedition was as follows: Dr. KIRK BRYAN, Professor of Physiography, Harvard University; Dr. S. SHELDON JUDSON, Jr., Department of Geology, University of Wisconsin; Mr. LOUIS DUPREE, Harvard University; Mr. CARLETON PIERPONT, Harvard University; and the writer. Professor BRYAN was assisted in the geologic field-work by Dr. JUDSON, while the writer had Messrs. DUPREE and PIERPONT as his assistants during the digging of the site.

The rock-shelter of La Colombière is 46.00 meters long and some 12.00 meters wide in the approximate center of the site below the maximum projection of the rock over-hang. When we arrived there on the 8th of June, 1948, not only was the place overgrown with small trees and shrubs, but also it was impossible to see across it, due to the presence of several enormous boulders and piles of earth. The former had fallen from the roof of the shelter during prehistoric times; the latter consisted of M. PISSOT's rather extensive dumps.

When the tedious work of clearing away this refuse had been completed (FIGURE 3), the limits of the areas previously excavated could be established. As the result of finding the edges of the

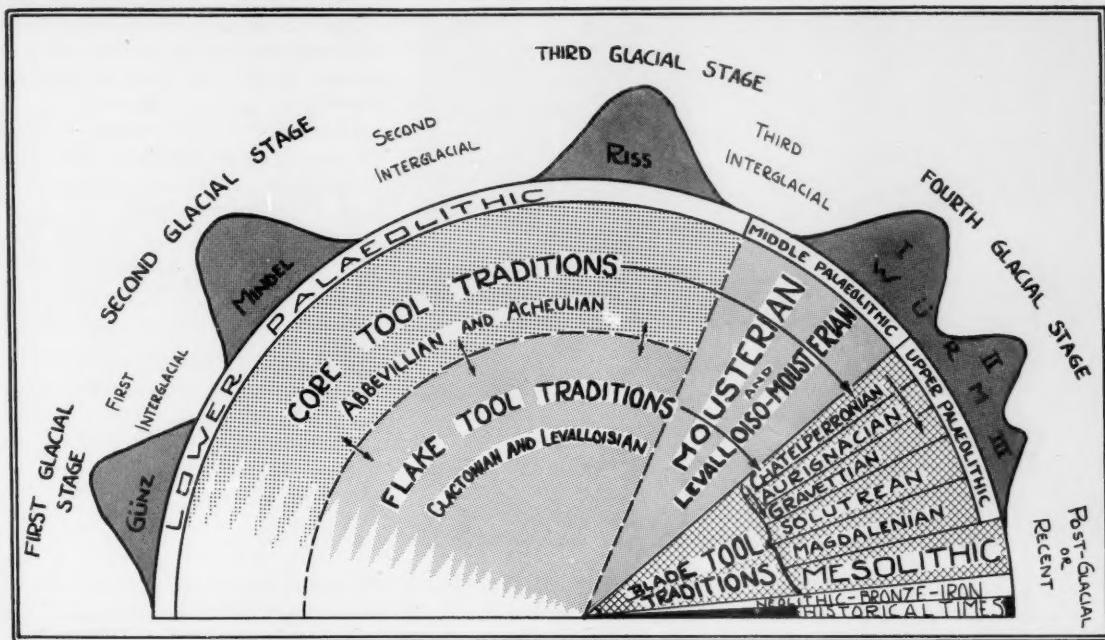


CHART OF THE PLEISTOCENE EPOCH, OR ICE AGE, SHOWING GLACIAL STAGES AND THE CONTEMPORARY CULTURAL DEVELOPMENT OF EARLY MAN

Prehistoric archaeology deals with the immense span of time between the first appearance of Man and the beginnings of written record—a period of perhaps some 1,000,000 years' duration. As indicated on this chart, which shows the relative duration of prehistoric time, during approximately 49/50ths of this period Man was in the Old Stone Age, or Palaeolithic and Mesolithic Stages, of cultural development. These stages cover the entire Pleistocene or Glacial Epoch, as well as much of Early Post-Glacial or Recent times. During the Pleistocene the northern regions and mountainous areas of the globe were subjected four times to the advances and retreats of the ice-sheets (those of the Alps are known as Günz, Mindel, Riss, and Würm), river valleys and terraces were being formed, and profound changes were being induced in the fauna and flora of the Earth.

Throughout the entire span of the Old Stone Age (including both the Palaeolithic and the Mesolithic Periods) Man was a food-gatherer depending for his subsistence on hunting wild animals and birds, fishing, and collecting wild fruits, nuts, and berries. On the basis of the evidence obtained to date, particularly that from Western Europe, it is possible to recognize *three* main groups of fundamental traditions employed by our Stone Age ancestors in manufacturing their stone implements. These subdivisions are as follows: (a) core tool traditions, (b) flake tool traditions, and (c) blade tool traditions. The industry found in 1948 at the rock-shelter of La Colombière by the Peabody Museum of Harvard University's Expedition to Eastern France belongs in the *blade tool* category; typologically it appears to have close affinities with what is known as the Gravettian Stage in the Upper Palaeolithic sequence of Western Europe.

trench dug in 1912–1913 in the eastern portion of the site, it was possible to identify accurately the various levels originally reported by Dr. MAYET and M. PISSET (compare FIGURE 2). During the course of these clearing operations, Dr. JUDSON successfully completed a detailed topographic map showing La Colombière and the adjacent region.

From the outset the chance that the rock-shelter had been occupied during the interval immediately preceding the deposition of the 20- to 23-meter terrace (i. e., prior to the invasion of the site by the river) was considered a good possibility. It was also believed likely that what appeared to be the top of a filled-in lower cave (see FIGURE 3) might yield evidence of an earlier, and possibly



FIG. 4. A deep trench, the outer or southern half of which was 2.00 meters wide, was dug through the river-laid terrace deposits at La Colombière to determine whether or not the site had been occupied prior to its invasion by the river in Late Pleistocene times.

Note the rails and trucks, used for removing the excavated material, in the foreground.

even more interesting occupation. But the hoped-for lower cave failed to materialize, and there was no evidence whatsoever of an occupation layer underlying the deposits in question.

Bed-rock was finally reached at a depth of 11.85 meters, and a magnificent section was exposed through the tightly-packed and fine-grained terrace deposits, which consisted entirely of sands and silts, with a basal layer of coarse sand and gravel (FIGURES 4 and 5). Throughout a very interesting fauna, especially rich in small vertebrates and also containing a few molluscs, was collected.

Abundant soil samples were taken for analysis, and it is hoped that on the basis of these the presence of a micro-fauna, as well as pollen (in the silty and clayey layers), will be demonstrated. It is felt that detailed studies of the fauna and the soil samples will yield interesting and important data on the environmental conditions that prevailed in the region during the time when the La Colombière terrace was being formed.

While the deep central trench was being driven through to the bed-rock at the archaeological site,

Professor BRYAN and Dr. JUDSON made an intensive study of the Late Pleistocene deposits of the Jura region in the vicinity of La Colombière. This work led to an extremely satisfactory and convincing tie-in of the 20- to 23-meter terrace of the Ain with a series of well-marked end-moraines near Nantua, a town approximately 11 miles due northeast of Poncin. In order to accomplish this it was necessary to leave the Ain Valley at the town of Croiselet and follow the valley of the Oignin River southward to the Nantua Basin. In this manner it was definitely established that the La Colombière terrace was formed at the time when the front of the glaciers was located near Nantua. This may certainly be regarded as a late episode during Würm (Fourth Glacial) times, but on the basis of the present evidence it is impossible to be more precise.



FIG. 5. Near the rear wall of the rock-shelter the width of the main trench was expanded to 4.00 meters. Bed-rock was finally reached below a total thickness of 11.85 meters of river-laid sands, silts, and gravels, of which the so-called La Colombière terrace was formed. There was no evidence of an early occupation of the site.

As regards the Upper Aurignacian occupation layers overlying the 20- to 23-meter terrace of the Ain at La Colombière, it was not only possible to identify all the levels reported by the original investigators of the site (see FIGURE 2), but also to establish the intimate and direct association of them with the uppermost portion of the thick deposits of river-laid sands and silts so clearly exposed in the main central trench. Very fine sections (FIGURE 6) clearly showing this relationship were revealed in both the western and the eastern portions of the site. In the latter sector the main occupation layer was for the most part intact. Although rich Upper Aurignacian (Gravettian) deposits were reported by MAYET and PISSOT in the former locus, almost no archaeological material was found there during the course of the 1948 season. The deposits in the eastern half of the rock-shelter, however, proved to be very much richer.

As previously stated, the Magdalenian⁴ layer was completely removed during the 1912-1913 season by Dr. MAYET and M. PISSOT; nevertheless a small patch of gravels that had accumulated during Late Pleistocene times was found in the base of a cleft in the rear wall of the eastern part of the site. In addition to a small collection of vertebrate remains, these gravels yielded the broken piece of an interesting broken bone object (FIGURE 7), which is possibly the perforated end of a so-called "bâton de commandement." In

FIG. 6. Section near the western end of La Colombière, showing the intimate and direct association of the gravelly occupation layers with the sands laid down when the Ain River invaded the site during the late stages of the formation of the 20- to 23-meter terrace.

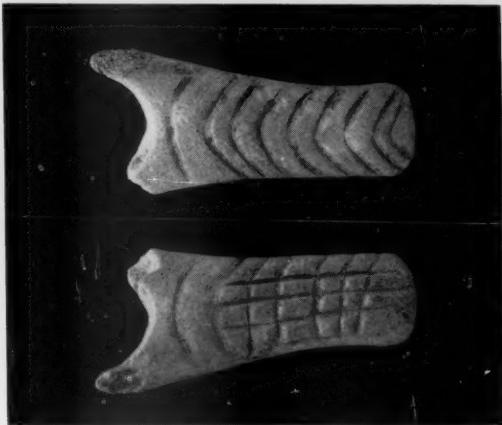


FIG. 7. La Colombière. Broken Magdalenian bone object, perforated at one end and decorated with chevron pattern crossed on one side by parallel lines.

any case, the geometric decoration—chevron pattern, crossed on one side by parallel lines—is typically Magdalenian. The object, which is 2½ inches (6.6 cm.) long, is broken at both sides of a well-made hole, and it is the only example of Magdalenian art ever found at La Colombière.

In the actual Upper Aurignacian occupation layer a typical assemblage of flint tools, including several Gravette points, was found at the extreme eastern end of the site. Furthermore, a large quantity of broken flints and animal bones was unearthed in the vicinity of a fairly extensive series of hearths that came to light in the east-central portion of the site. In definite and direct association with this hearth complex an outstandingly fine art object—a very beautifully engraved pebble—was discovered.

Of the five or six superimposed animals on each surface, the extremely naturalistic horse, shown in the upper photo in FIGURE 8, is the most easily recognizable. But there are also a second horse, a very finely-drawn reindeer (with shed antlers), an ibex, a woolly rhinoceros, two carnivores (possibly bear), as well as several as yet unidentified animals (FIGURES 8 and 9). It is considered to be one of the finest examples of an Aurignacian engraved object that has ever been found, and constitutes a find of great importance from the point of view of Upper Palaeolithic art. Unfortunately it has been broken at one end. It has been made a national antiquity by the French Government. For study purposes the Ministry of

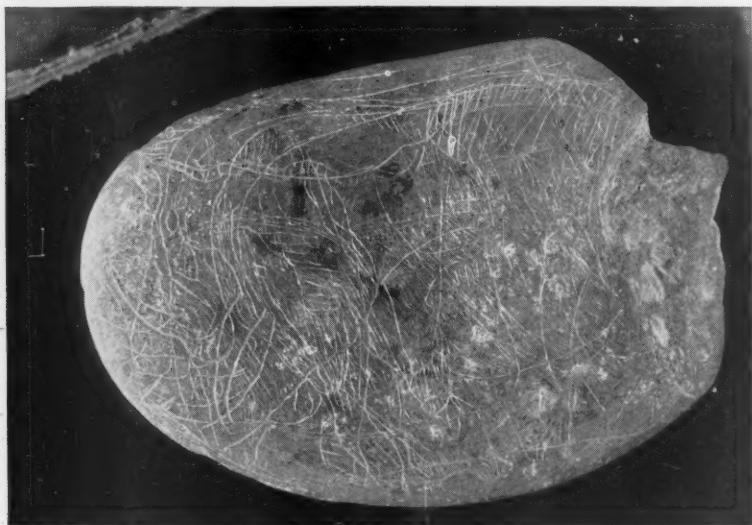
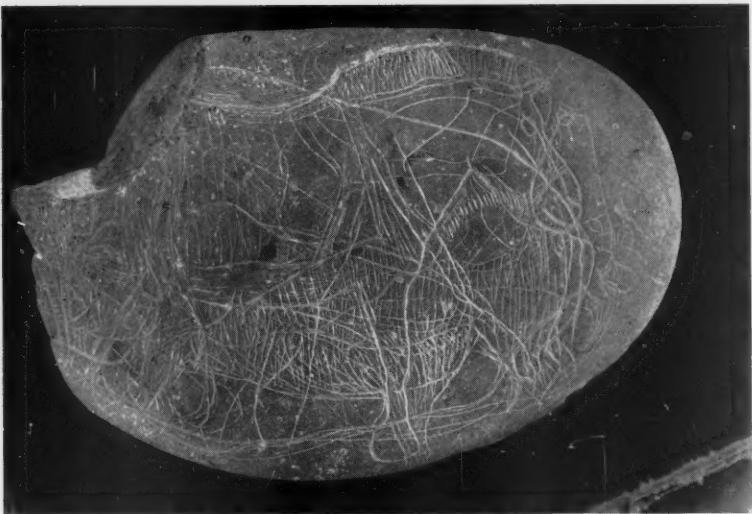


FIG. 8. The beautifully engraved pebble discovered during the 1948 season in the Upper Aurignacian occupation layer at La Colombière, near Poncin (Ain).

Upper: The obverse surface of the pebble, showing a very realistic horse, which is by far the most easily recognizable of any of the engravings on either face. In addition, there are an extremely finely drawn male reindeer (with shed antlers), an ibex, and two carnivores, probably bear. The heads of the two former animals appear upside down on the right of the above photo. At least two other as yet unidentified ungulates may also be distinguished.

Lower: The reverse surface of the pebble, on which a second horse and an outstandingly fine woolly rhinoceros are depicted. There are also the heads of two other partially completed rhinoceroses, and the outline of the body and legs of what appears to be a cervid of some type.

National Education of the Republic of France has graciously permitted the expedition to bring this singularly fine object to the Peabody Museum of Harvard University.

Tentative Conclusions

On the basis of the results achieved to date, it is possible to state that the earliest occupation of the rock-shelter of La Colombière was effected immediately following the deposition of the 20- to 23-meter terrace in the Ain Valley, an event that occurred during Late Glacial times, when a tongue of the main Rhône Valley glacier was stationary at a line clearly marked by a series of

end-moraines across the Nantua Basin. The first inhabitants of this site were people who possessed a very typical Upper Aurignacian (Gravettian) culture. At this time the river, which was incising itself into a flood plain on the present +20- to +23-meter level, still occasionally flooded the site during seasons of high water. In terms of glacial chronology, this was during the beginning of the retreat of the late Würm ice from the Nantua moraines. On this basis, La Colombière is the first Upper Palaeolithic occupation site in France to be geologically dated.

At the time these Upper Aurignacian hunters moved into the Jurassic limestone uplands of the

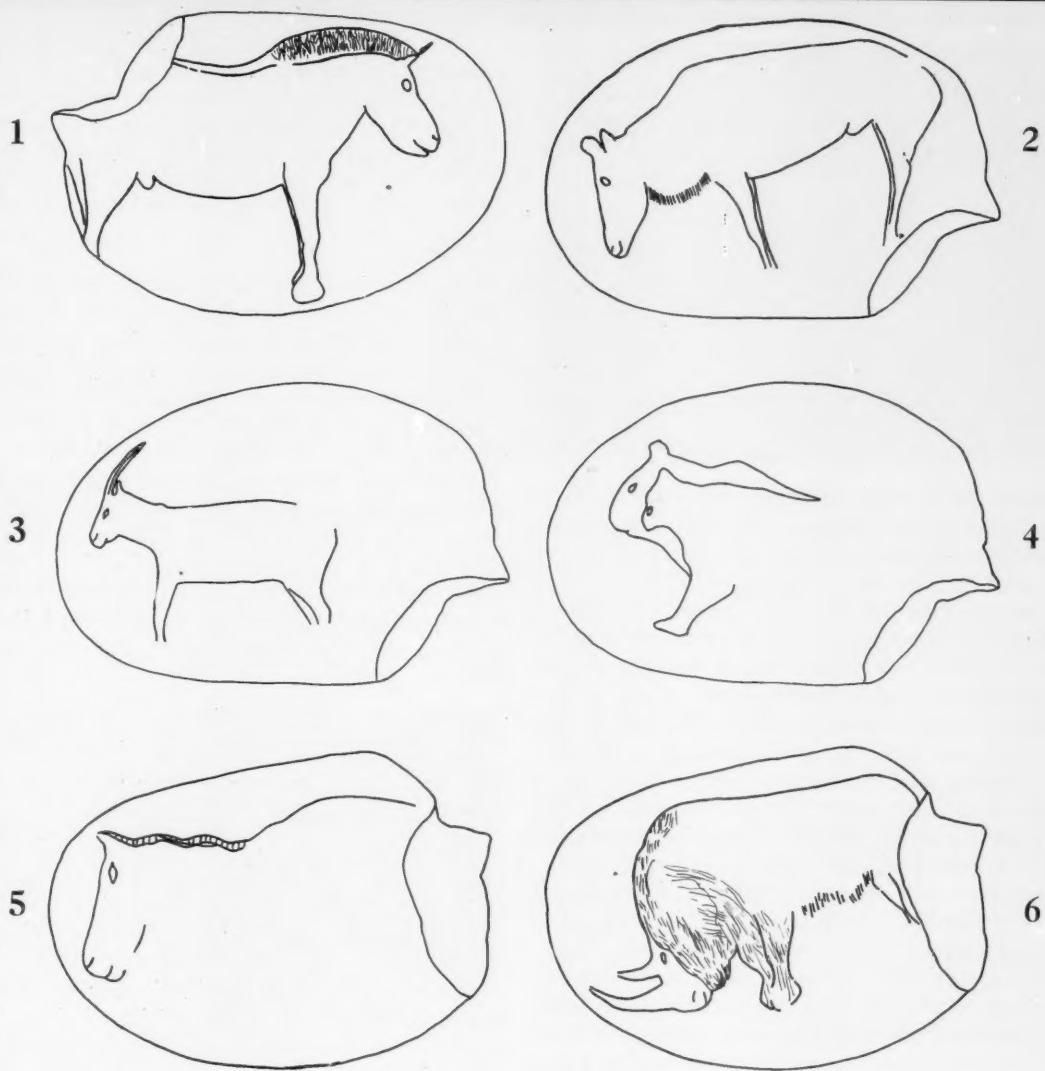


FIG. 9. Outline drawings of some of the most easily distinguished animals engraved on the interesting pebble found at the La Colombière rock-shelter in an Upper Aurignacian context.

Nos. 1-4: Upper surface. Nos. 5-6: Lower surface.

On the basis of the exceedingly skillful and very realistic portrayal of the forms represented, it is at once apparent that the drawings reproduced above come from the hands of men who knew their models intimately at first hand. In particular, the engravings of the horse (No. 1) and the woolly rhinoceros (No. 6) are so remarkably alive that there is no mistaking the subjects. Note that all four legs are shown in the case of Nos. 1, 2, 3, and 6, and that the hair on the neck, forelegs, and shoulders of the rhinoceros has been cleverly arranged so as to suggest shading.



FIG. 10. The interesting engraved pebble described in the accompanying text was found on the main (Upper Aurignacian) occupation layer of La Colombière, in direct association with an extensive hearth (diameter 2.00 m., thickness 40 cm.), on the surface of which the meter-scale in the above photograph is resting.

Southern Jura, cold grassy steppe conditions prevailed in the Ain Valley. The region supported a rich grazing fauna which thrived in a climate characterized by fairly warm summers, severe winters probably with much snow, and short spring and fall seasons; in other words, an environment very similar to that which exists today in the northern portion of Europe.

Neither the relatively small series of flint implements recovered at La Colombière, nor the total number and thickness of the fire hearths, in comparison with other Upper Palaeolithic sites in Western Europe, suggests that this rock-shelter was ever permanently occupied. Furthermore, during the wet summer of 1948 it was found that the roof "leaked" very badly. This unpleasant feature, coupled with the fact that during Late Pleistocene times weathered-off fragments of limestone must have been constantly falling from the top and sides of the shelter, would not have been an inducement to settlers to occupy the place permanently. On this basis, it is concluded that the site was used only as a temporary camping place during the hunting season.

Finally, why are there so many animals superimposed on the two surfaces of a single pebble that measures only $4\frac{3}{4}$ inches long, $3\frac{1}{4}$ inches wide, and $1\frac{3}{8}$ inches thick ($12 \times 8.2 \times 3.5$ cm.)? In providing an answer to this question it seems difficult to avoid putting forward the suggestion that, in the eyes of the prehistoric occupants of La Colombière, this pebble was probably regarded as a hunting talisman rather than an art object. For there are thousands of similar water-worn limestone pebbles strewn on the floor of the

Ain Valley near La Colombière. Surely, if an Upper Aurignacian artist had simply wanted to reproduce in the form of an outline drawing one of the animals his group was hunting (i. e., art for art's sake), it would be logical to expect him to select a new pebble with a fresh surface each time he desired to depict a new animal.

Therefore, it is probable that there was some definite reason for superimposing so many animals on a single pebble, and on this basis it is felt that the only plausible explanation is to regard the object as having importance in connection with certain magico-religious rites performed in connection with the chase. Thus we can imagine that the pebble was initially engraved and used in a hunting ceremony. Since that particular hunt was successful, the pebble was re-engraved and used on subsequent occasions for the same purpose. It possessed magical qualities, or "mana." It is therefore tentatively concluded that the primary significance of this very fine object, from the point of view of the people who actually lived at La Colombière during the closing phases of the Ice Age, was not the beautiful engravings so carefully executed on its surfaces, but the fact that it was the medium by which it was possible to commune directly with the spirits of the animal world for the purpose of successfully replenishing the all-important food supply.

¹ MAYET, LUCIEN, and JEAN PISSOT, 'Abri-sous-roche préhistorique de La Colombière, près Poncin (Ain)', *Annales de l'Université de Lyon*, Sér. I, Vol. 39 (1915), pages 1-205.

² This layer was completely excavated by MAYET and PISSOT during their 1912-1913 season.

³ The type station of the Solutréan culture, Solutré (Saône-et-Loire), is located near Macon, less than 35 miles due west of Poncin.

⁴ The Magdalenian is a prehistoric culture which attained the peak of its development during the closing stages of the Ice Age, some 10,000 years or so after the Aurignacian.

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A waterfront street at Tumaco. This town is the metropolis of the Colombian part of the ancient Atacames archaeological area and one of the chief markets for its antiquities. The present population of Tumaco is mostly negro, but Chocó, Coaquer, and Cayapa Indians live in the neighborhood and come in occasionally to trade.

THE POTTER'S ART OF ATACAMES

By John Howland Rowe

ONE OF THE LEAST KNOWN ARCHAEOLOGICAL AREAS OF THE NEW WORLD YIELDS SOME OF ITS FINEST POTTERY



ON THE WEST COAST OF SOUTH AMERICA there is a short stretch of coast between Tumaco in Colombia and Cape San Francisco in Ecuador which faces almost north. At some undetermined period in the ancient past it was the home of a remarkably artistic people whose modelled pottery and finely ground stone axes wash out of the river banks and appear on the beaches of the sandy islands formed and reformed by the Pacific rollers.

We do not know what these people called themselves; their handiwork appears in the few museums fortunate enough to have collections of it under the names of Esmeraldas, La Trolita, and Tumaco, modern place-names of the area. The writer, and Prof. HERNANDEZ DE ALBA of the University of the Cauca, are proposing the name of Atacames for the whole archaeological area, as that was the name of the principal native settlement there when PIZARRO explored it in the sixteenth century.

Lacking big ports and off the main lines of modern travel, rainy and covered with tropical forest for the most part, the Atacames area has remained one of the least explored in all New World archaeology. MAX UHLE and MARSHALL

(Continued on page 34)

This bank is packed with bits of broken pottery, many of them painted or modelled. At the left is the bed of a dry watercourse. It is from sites like this that the pieces illustrated were collected. The gentleman examining the site is VICTOR W. VON HAGEN, biographer of JOHN LLOYD STEPHENS. (Caño Frito, Island of El Morro, Tumaco.)





Above, left: Pottery head of a noble, dressed like the one pictured on page 34, but with the addition of large ear plugs. The delicate modelling of the face suggests that the piece may be an idealized portrait. (Arch. Mus., Popayán, No. 46.27.131. 15 cm. high.)

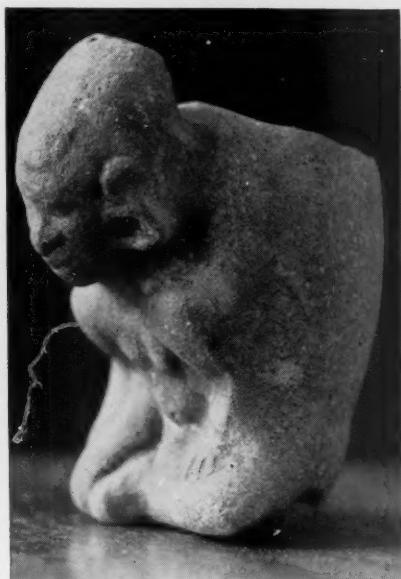
Above, right: An unusually large head, modelled in great detail. It represents a warrior with an elaborate helmet and a curious hooked nose ornament. Note that the representation of each feature is highly conventionalized, yet the whole head gives an impression of naturalism. (Arch. Mus., Popayán, No. 46.27.130. (23 cm. high.)



Left: A caricature of a nightmare, by a very ingenious potter. These caricature pieces are quite common in Atacames collections, but no two are alike. (Arch. Mus., Popayán, No. 46.27.132. 16 cm. high.) This piece is reproduced again on the front cover of this issue.

Right: This dragon's head is liberally adorned with lesser serpents, but withal is more amusing than terrifying. Like the other heads, it once had a clay body, now broken off and lost. (Arch. Mus., Popayán, No. 46.27.293. 13 cm. high.)





Above, left: The resemblance to a baseball player is purely coincidental. This gentleman is a warrior wearing a breastplate and breech clout and armed with a heavy club. The pose is curiously reminiscent of certain pottery figurines from western Mexico. (Arch. Mus., Popayán, No. 46.27.58. 26 cm. high.)

Above, center: A hollow jar in the shape of a woman with a load on her back. The softness of the outlines is partly due to weathering, but it was a nice piece even when new. (Arch. Mus., Popayán, No. 46.27.18. 15 cm. high.)

Above, right: This snarling woman is dressed in nothing but an apron, a necklace and a pair of ear chains. (Arch. Mus., Popayán, No. 46.27.59. 16 cm. high.)

Right: A fragment of an incised bowl of fine grained pottery fired a beautiful grey. The artists of Atacames were just as competent at abstract design as at representation. (Arch. Mus., Popayán, No. 46.27.542. 7.5 cm. high.)

Below, right: Globular jar with two spouts and a bridge, a shape reminiscent of some found along the coast of Peru and others from the Quimbaya region of Colombia. Even the plainer pieces have handsome lines. (Arch. Mus., Popayán, No. 46.27.30. 10.5 cm. high.)





Pottery head of a noble wearing a helmet, nose ornament, and collar. The curious bulb on the back of the head results from the conventionalized representation of artificial head-flattening, common in this style. (Archaeological Museum, Popayán, No. 46.27.146. 10 cm. high.)

SAVILLE made notes and collections there early in the present century but published only brief reports. The biggest museum collections from Atacames are probably those of the Museum of the American Indian, New York; the Musée de l'Homme, in Paris, and the Archaeological Museum in Popayán, Colombia.

There are also a number of private collections, some of them very extensive, in Europe and America. M. RAOUL D'HARCOURT, the distinguished French peruvianist, has recently published a beautifully illustrated description of two collections in Paris from the southern part of the area 'Archéologie de la Province d'Esmeraldas (Equateur)', *Journal de la Société des Americanistes*, n. s., vol. 34, pages 61-200 (Paris 1947).

The collection in the museum at Popayán is in some ways the most remarkable of all. It was made by Sr. MAX SEIDEL, for many years a resident of Tumaco, who bought the most artistic pieces brought to him by the rivermen from the northeastern part of the Atacames area, and its best pieces are easily superior artistically to the

best of the pieces that have been previously published. Prof. GREGORIO HERNANDEZ DE ALBA, director of the museum, very kindly permitted me to study the Atacames collection and authorized the publication of ten examples. He is preparing a more detailed study of his own of this material.

I had an opportunity to visit Tumaco in December, 1947, with Mr. VICTOR W. VON HAGEN, and we explored two sites of the Atacames culture on the Island of El Morro, across the harbor from the town. Both were low sand banks topped by two or three feet of ancient habitation refuse, full of pottery fragments. They were exposed where streams had cut into the banks, and the sherds appearing on the surface had already been picked over by the local collectors. Sites of this sort are abundant in the Tumaco area and would well repay excavation.

In addition to their fine pottery modelling, the craftsmen of Atacames were some of the best metallurgists in native America. Considerable quantities of small metal objects have been found at the great Atacames mound site of La Tolita (Province of Esmeraldas, Ecuador) and analyzed by PAUL BERGSOE of Copenhagen, who identified the numerous technical processes used by the Atacames people in the treatment of gold, platinum, copper and lead for the manufacture of jewelry. There is little doubt that these people were the first metallurgists in the world to use platinum.

All students of the art of Atacames are struck by its apparent resemblance to certain Mexican and Central American styles, and MAX UHLE even went so far as to attribute the Atacames culture to Maya immigrants. There are also definite resemblances in the Atacames material to the Early and Late Chimú styles of the northern Peruvian coast, and naturally enough even closer ones to the archaeology of the Manabi area just south of Atacames on the coast of Ecuador.

The relationship of Atacames art to that of other areas is a very intriguing problem, but one that cannot be satisfactorily solved until we have some idea of its chronological position. For example, no evidence yet to hand indicates that the Atacames style is later than the similar styles in Mexico and the Maya area, so that even if the resemblances indicated some direct contact, the direction in which the influences moved would remain in doubt. For the present, Atacames remains one of the greatest challenges in New World archaeology.

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AENEAS AND ANCHISES ON A DENARIUS OF CAESAR

WHEN JULIUS CAESAR CROSSED THE RUBICON in 49 B.C. he assumed responsibility for maintaining his army and, a few months later, for supporting the entire Roman state. One of the first things he did was to issue coins which, in daily use, spread his name and power. He followed the precedent of earlier leaders in keeping the established denominations but in selecting types or designs for the "heads" and "tails" which redounded to his glory.

As a member of the Julian family, he claimed descent from Venus, whose son Aeneas was the father of Ascanius or Iulus. Even before Vergil Romans had known about the Trojan hero Aeneas, who escaped from the burning city with his aged father Anchises on one shoulder and the Palladium, a sacred statuette of Minerva, in the other hand. His flight is depicted, on the reverse or "tails" of this coin, in a somewhat archaic style which contrasts with the beautiful head of Venus on the obverse and therefore suggests an

early Greek statue of the group. The simple legend CAESAR boldly states the authority of the master of Rome.

This silver coin, minted in 48 B.C., is almost exactly the size of our dime but it was worth almost twice as much (20 cents) and had an even greater purchasing power. It is a *denarius* which means 10 *asses*. The bronze *as* (about 2 cents) and *sesterce* (2½ *asses* or a "nickel") were common subdivisions of the *denarius*. The only other silver coin was the rare *quinarius* (5 *asses* or a "dime"). Gold coins, valued at many *denarii*, were never in general circulation, but the *denarius* was symbolic of Roman monetary power from the creation of an independent coinage until the third century A.D. It survives today in the Italian *denaro* (money) or in the abbreviation d. (penny) in British currency. It is the word translated "penny" in the story of the Tribute Money in the King James version of the New Testament.

—LAURA B. VOELKEL



Mycenae (March 31, 1849). The lion-gate is barely visible. Lear's memoranda will recall the coloring to one who has seen it, "Walls, very red and oker, chasms of grey rocks, perpendicular, spotted here and there with shrubs and dashed with red ochre, Amalfiwise."

"HOW PLEASANT TO KNOW MR. LEAR!"

By Shirley Howard Weber

Among the large collection of engravings, unique and original drawings and water-colors in the Gennadeion in Athens, there is an important series of sketches of Greek scenes made by Edward Lear, the landscape painter, on the Greek mainland, in the Ionian Islands, and in Crete. The Librarian of the Gennadeion here gives a brief account of Edward Lear, and has chosen for illustration sketches of five famous sites as they were in March and April, 1849, just a century ago, before the arrival of the spade of the archaeologist.

EDWARD LEAR (1812-1886) is better known as the author of nonsense verse (limericks, *The Owl and the Pussy-cat*) than as a landscape-painter. In that respect he has shared the fate of his younger contemporary, whose fame rests entirely on the immortal "Alice" books, and not on his mathematical studies.

LEAR started to draw at an early age, and at fifteen was beginning to earn a living by it. His earliest important assignment was painting the parrots at the Zoo in Regent's Park, which

later resulted in a book that drew the attention of the EARL OF DERBY. He was invited to paint the wild animals in the Earl's private collection at Knowsley Hall, and while there struck up a friendship with the children of the family and their young friends. For them he wrote the book of nonsense that was to make him famous.

But ill-health and a desire to see the world turned Lear to landscape-painting, an occupation which he pursued the rest of his life. He



The Acrocorinth (April 1, 1849). At the foot of the mountain are the ruins of ancient Corinth which are dominated by the temple. The ruined tower at the left, which LEAR has facetiously named "Camel Bey, his house," has long since disappeared. Under, indistinctly at the right, is written "a depth full of sheep, gotes, and other vegebles."

toured Ireland, Italy, Greece, Albania, Corsica, lived for some years in Corfu, traveled in Egypt, Palestine, India, and Ceylon, and finally came to rest in San Remo, on the Riviera, where he died. He produced thousands of sketches on these trips, carrying them back to be worked up for orders for oil-paintings. Some he used for lithographs to illustrate the published journals of his travels. After the publication of his *Illustrated Excursions in Italy*, in 1846, he was invited by QUEEN VICTORIA to give her a course of drawing lessons.

LEAR's landscapes were first sketched on the spot in crayon with copious notes as to color and detail, often whimsically written and spelled. These were taken home and colored, and then worked up into the finished product as desired. With some few striking exceptions, the preliminary sketches in color are more satisfactory than the oils or lithographs. For LEAR regarded the making of a painting as a chore, "a nawful bore," as he called it, "painful

disagreeable work," something to be gotten over with. His interest was in form, line, and accurate draftsmanship, not in subtleties of rhythm and color. For such a painter the Greek landscape presents the finest subjects for his art.

Personally LEAR was grotesque in appearance. In the poem of which the first line is quoted as the title to this article he describes himself:

*His mind is concrete and fastidious,
His nose is remarkably big;
His visage is more or less hideous,
His beard it resembles a wig.*

But he had a lovable character that endeared him to young and old alike. Without being a snob or a climber, for he loathed visiting the houses of the great and artificial conversation, he won the affection of men and women in high places. Many of these close friends were much younger than himself, notably SIR FRANKLIN LUSHINGTON, and EVELYN BARING (later



Eleusis (April 3, 1849). The ancient watch-tower on the hill has now almost disappeared; only the left side remains. The ruins are as yet undisturbed, and the ugly factory chimneys near the bay, that now mar the scene, have not yet appeared. Lear appreciated the pictorial value of goats, with their solemn, dignified poses.

Chæronea (April 13, 1849). Scene of the victory of the army of Philip of Macedon in 338 B.C. Parnassos towers over the plain, and the marble lion erected to commemorate the battle lies in fragments, where it had been blown up by the Turks in search of treasure.

Delphi (April 16, 1849). Over the ancient site a town had grown up as shown in the sketch. It was ruined by a severe earthquake in 1890, and removed to a site further down the road, so that the French archaeologists were enabled to explore the ancient shrine, a bright spot in their history of achievement.

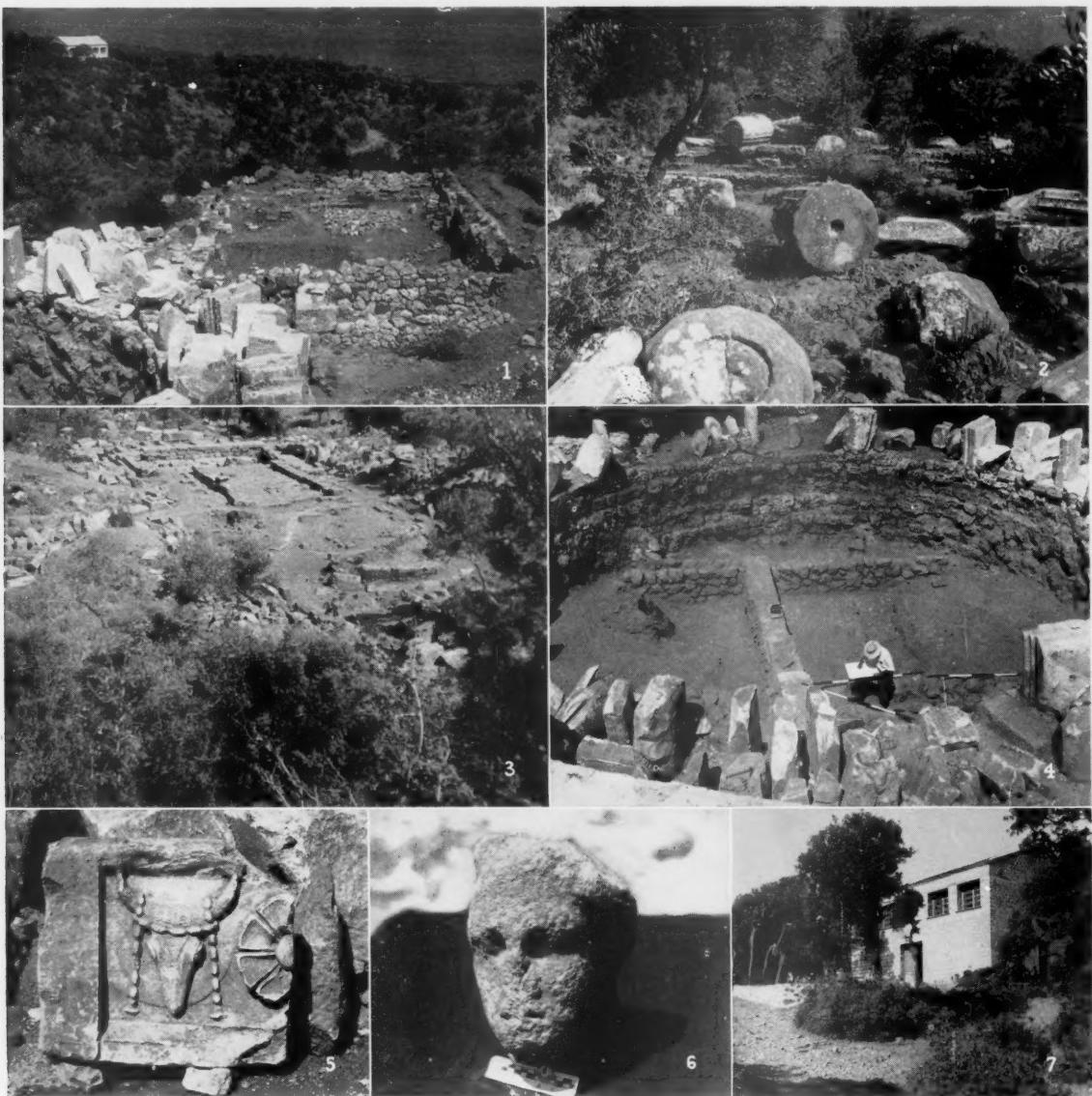
LORD CROMER). It was with LUSHINGTON that he made his memorable trip through Greece in the spring of 1849, from which he brought back over two hundred sketches. Forty of these are now in the Gennadeion. LEAR's sketches, about ten thousand, according to his biographer, ANGUS DAVIDSON, were left to LUSHINGTON, who became his executor at his death.

LEAR was an indefatigable worker. One has only to look at the dates on his sketches, dated to the hour of the day, and to read the journals of his travels in Illyria and Albania, 1852, and the companion volume on Southern Calabria, to

appreciate his energy. Incidentally, these two travel books are still unmatched in their descriptions of those little-visited places.

It was his friends, mostly, who bought his pictures, and as a result many of them are hidden away in English country-houses to-day. The magnificent painting of the rock-cut temples of Petra, sketched under hair-raising circumstances, as told by ANGUS DAVIDSON (*Edward Lear*, page 112), is at the present writing in the hands of one of LEAR's relatives in New Zealand. LADY STRACHEY'S two volumes of his letters contain lists of his oil-paintings and their present locations.





EXCAVATIONS IN SAMOTRACE · SUMMER 1948

The Archaeological Research Fund of New York University resumed excavations in the summer of 1948 in the famous sanctuary of the Great Gods on the Greek island of Samothrace, in the northern Aegean Sea. These excavations had been initiated before World War II. During and after the war the sanctuary suffered great damage (see ARCHAEOLOGY 1.44-49). The excavations, carried out under the auspices of the American School of Classical Studies at Athens and supported by a grant from the Bollingen Foundation, are under the direction of Dr. KARL LEHMANN, of the Institute of Fine Arts of New York University. The Archaeological Research Fund plans to continue work in Samothrace for a number of years. — KARL LEHMANN

FIG. 1. View of the mystery sanctuary of the Great Gods of Samothrace. In the center foreground, the great hall used for initiation into the Samothracian cult, built in the late sixth century B.C., discovered by the expedition in 1938, and excavated before the war. Cleaning and restoring as well as work of protection were undertaken during the 1948 campaign.

In the left background, nearer to the seashore, is the local museum erected by the expedition.

FIG. 2. The New Temple in the sanctuary of the Great Gods of Samothrace as it appeared previous to its excavation during the 1948 campaign. The overgrown ruin, never before fully excavated, was covered with about five hundred blocks of its superstructure, of marble and limestone, which had to be removed before excavation. Though badly damaged, the temple may in the future be partially re-erected.

FIG. 3. The New Temple after excavation. The photograph is taken from the spot where the famous Nike of Samothrace, now in the Louvre, once stood overlooking the main part of the sanctuary. The "temple" is distinguished by the existence of an apse (right center), and shows a curious interior installation providing for various sacrificial rites and seats for spectators. The building in its present form dates from the late second century B.C., but it succeeded an earlier temple preserved in its foundations.

FIG. 4. The excavation in the interior of the great rotunda dedicated by Queen Arsinoe to the Great Gods of Samothrace in the third century B.C. The picture shows the huge foundations of this biggest Greek circular building and in them the walls of an earlier sanctuary, in the form of a twin precinct, dating from the seventh century B.C. In the left center is visible an oven-shaped pit for libations to underworld gods.

FIG. 5. Parapet block from the decoration of the rotunda dedicated by Queen Arsinoe to the Great Gods of Samothrace. This parapet formed part of the upper decoration of the building and the bucrains refer to its destination as a sacrificial hall. The particularly fine piece illustrated was uncovered during the 1948 campaign.

FIG. 6. Half-life-size marble head from a statue of the fourth century B.C. Although worked in the rather poor marble from the nearby island of Thasos, and badly corroded, the head reflects the style of the sculptor Scopas, who is known to have made a cult image of Aphrodite for Samothrace in that period.

FIG. 7. The museum built by the Archaeological Research Fund of New York University near the excavation site on Samothrace. Work on the structure had been begun before World War II. After the looting of building material by the Bulgarian Army the expedition was able to complete the structure during the 1948 campaign, and to provide shelter for the antiquities of the island.

The building was designed by Mr. STUART S. SHAW, of the Education Department of the Metropolitan Museum of Art in New York, who serves as architect to the expedition.



HIRAM BINGHAM AND HIS LOST CITIES

By Victor Wolfgang von Hagen

Victor Wolfgang von Hagen, St. Louis-born, has conducted five expeditions into Latin America. His work, now mainly ethnographical, has been channeled into many little-known horizons in American proto-history. He studied and captured alive, for the first time, the legendary quetzal bird (of the Quetzalcoatl myth), studied the origins of primitive American paper-making, and produced the only book on the subject The Aztec and Maya Papermakers. Then, turning to the history-makers, he wrote the biography of John Lloyd Stephens, Maya Explorer. Now, after a year and a half in South America, he is preparing a new study of the conquest of Peru, The Men of Gallo.

Photographs not otherwise credited are by A. Guillen, Lima.

THE LATE HIRAM BINGHAM," AS THE PERUVIANS once referred to him in their journals, was able, recently, to echo the words of MARK TWAIN about his lateness being highly exaggerated, as well as to return to Peru and dedicate *in persona propria* a road named in his honor that snaked up to Machu Picchu. At the same moment, he ended his archaeological oblivion by retelling the story of that discovery.*

We of this generation are not now able to appreciate the public interest in the discovery of Machu Picchu; it was as intense as that which followed the uncovering of the tomb of King Tutankhamen, this evidenced by the great number of popular articles HIRAM BINGHAM devoted to it, and by the whole issue of the *National Geographic Magazine* devoted to its telling; for on the knife-edge of a high canyon in the Urubamba valley Americans

had discovered a mysterious stone city unknown to the Spaniards and never mentioned by the Incas.

Dr. and Mrs. HIRAM BINGHAM en route to Peru at the invitation of the Republic of Peru, October, 1948. He dedicated a road which rises from the Urubamba river to the ruins of Machu Picchu, named in his honor "El Camino de Hiram Bingham." (Grace Line photo)



* *The Lost City of the Incas*, by HIRAM BINGHAM. xviii, 263 pages, 64 plates. Duell, Sloan & Pearce, New York 1948 \$5.00

Between 1911 and 1916, in the wave of speculation following this discovery, HIRAM BINGHAM conducted four expeditions to Peru because of this Machu Picchu; these eventually provided the greatest stimulus to South American archaeology since the publication of Prescott's *Conquest of Peru* (1847). For on these expeditions was Dr. ISAIAH BOWMAN, former President of The Johns Hopkins University, whose work on the geology and geography of these expeditions continued his interest in South America; he was later elevated to the presidency of the American Geographic Society, and this led, eventually, to the famous 1:1,000,000 map of South America. Present too on the 1914 expedition was PHILIP AINSWORTH MEANS; the stimulation gained from his experiences began a career which so enriched our knowledge of Inca history; and in another field, botany, Mr. O. F. COOK, studying the ethnobotany of the Inca, first suggested this as a means of understanding the development of the primitive American peoples. If HIRAM BINGHAM, following these expeditions, became a legendary figure, it is because, after many years of research in South America, World War I caused a sharp diversion in his interest. This was followed by his becoming Governor of Connecticut (1924) and then United States Senator. *Machu Picchu*, published in 1930 in a limited edition, was his last audible archaeological word until the publication in 1948 of *The Lost City of the Incas*.

Peruvian chronology, in the last years, had undergone a sharp change in concept. The old term "pre-Incaic" that envisioned a culture stretching back into times infinitely ancient has now been altered; the Inca culture, as we now conceive it, is of comparatively recent date. The foundation of Cusco, the Inca capital, is placed near 1130 A.D., and the welding of the whole Inca-realm which stretched from Chile to Colombia, from the Pacific to the pampas of Argentina, is viewed as having taken place between the years 1000-1500. It is just this shortening of the date-concept which enhances rather than denigrates the Inca achievement. However, the Incas, as organizers, were heirs to a mosaic of Andean cultures of whose time-origins we still have no concept. At the time of the Inca conquest, the Andean culture-area was broken up into an infinitude of clans, or political units, each with its own language, religion—and antagonisms; agriculture was the one culture-currency common to all.

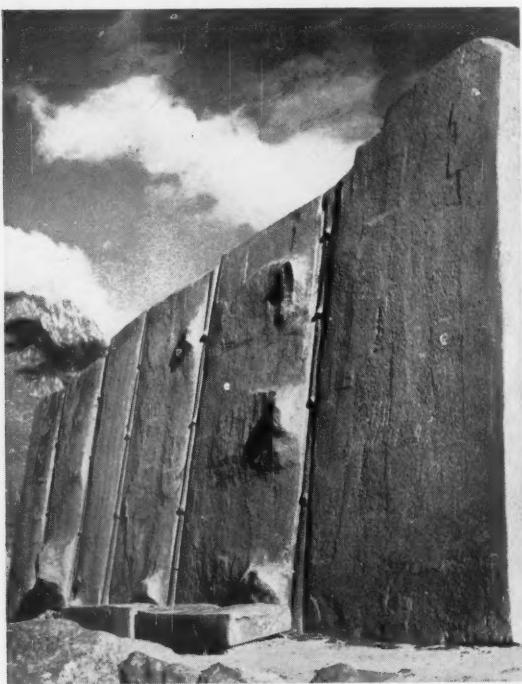
The Quechua-speaking tribes' mission was to weld all these motley groups, hardly aware of each other's existence, into "empire," an empire with a common tongue, communication, political organization, religion, and perpetuity, by establishing the theocracy of the Inca. During his four centuries of hegemony, the Inca constructed much of that which today remains above the ground. A paved road—a marvel to the Spanish conquistadores—ran along the Andes from Bolivia to Quito, with tampus (caravanserais) at stated intervals; this was matched by a coastal road, walled with adobe. As the coastal cultures, such as

the Nasca, Mochica and Tallanes, were absorbed into the Inca culture, so too their gods became part of the Incaic pantheon—as witness the coastal oracle Pachacamac. The Quechua language was pressed upon the conquered, facilitated by population shifts; and the ancient system of Andean clans, ayllus, was systematized into communal cells, dominated by a leader answerable to the Inca. Taxes, in the form of work-service, were levied on all the Incas' subjects, and it was this type of mit'a labor which built the spectacular buildings, now mostly in ruins, which dot the Peruvian landscape.



The upper Vilcanota-Urubamba valley, showing the ancient Inca terracing at Pisac. The river winding through this valley leads to the Urubamba and the environs of Machu Picchu.

The Inca conquests produced enemies; the Chanchas rose in rebellion in 1430, moved on Cusco, and almost conquered it. This caused the Inca, after their defeat, to rebuild his capital and also to inaugurate a series of far-flung fortifications to protect his realm. This empire was constantly harassed on its flanks, to the north in Ecuador, to the south from Chile, and to the east by the wild hordes of the Amazon. For, although Cusco was at 11,000 feet altitude, it was only twenty miles from the temperate valleys of Vilcanota-Urubamba which led into the Amazon, into that region of jungle tribes which the Inca called by the generic name of "Antis."



Megalithic walls at Ollantaitambo, built c. 1400 A.D. Until Machu Picchu was built, Ollantaitampu (as originally pronounced) defended Inca territory against the incursion of hostile tribes from the Amazon.

site in the world. Essentially a *pucara*-village, there are defense walls, dry moats, terracing, aqueducts, and a complex of temples and houses, of a variety of architectural techniques, all constructed of white granite. One of the temples, made of cyclopean units, has three windows in it—an uncommon architectural feature in the frigid Andean zones—which is important in the “Machu Picchu controversy,” for from it, or because of it, Dr. BINGHAM has conceived a controversial theory about its origin.

What was Machu Picchu? What was the function of this city which was unknown to the Spaniards and never mentioned by the Incas? Why were most of the skeletons found there of women and few of men? These were the questions young HIRAM BINGHAM asked himself when on that drizzling day of July 24th, 1911, he followed a metizo, MELCHOR ARTEAGA by name, up the perpendicular cliffs of Machu Picchu. Although he was well aware, as he began his investigations, of the galaxy of ruins along the Urubamba canyon, BINGHAM believed,

It was along this Vilcanota-Urubamba valley that the Inca built the most spectacular defense system. Beginning with Pisac, an astonishingly daring city balanced on rock pinnacles, the canyons were terraced along the valley. Occasionally, they built (as Inca towns were not fortified) mountain-top *pucaras* where the population retired when attacked. Fifty miles from Cusco was the great outpost of Ollantaitambo, at once a *pucara*, a city, a religious center, and a vast agricultural area. Then, in the direction of the Amazon, more towns, *pucaras*, terraced villages continuing down into that region where the Urubamba becomes a gorge. Here the settlements were placed on the cliffs overhanging the canyon, a variety of sites in the Vilcabamba massif (first revealed by BINGHAM and thirty years later uncovered by PAUL FEJOS); here terraced *pucaras*, lookout platforms, and religious centers have been uncovered, all bound together by a web of Inca roads which wind about these otherwise inaccessible regions.

These canyon-perched cities culminate in Machu Picchu, which rests in a plain between two peaks, Machu Picchu and Huayna Picchu: the most spectacular archaeological

Looking down on Machu Picchu from the heights of Huayna Picchu. At this height all the details of the *pucara* are clearly visible: the terracing, the former mountain entrance to the city, and the acropolis-like structure of the city itself.



The semicircular temple at Machu Picchu, an unusual archaeological feature among the Incas. HIRAM BINGHAM believes this to have been the model for the famous Temple of the Sun in Cusco.

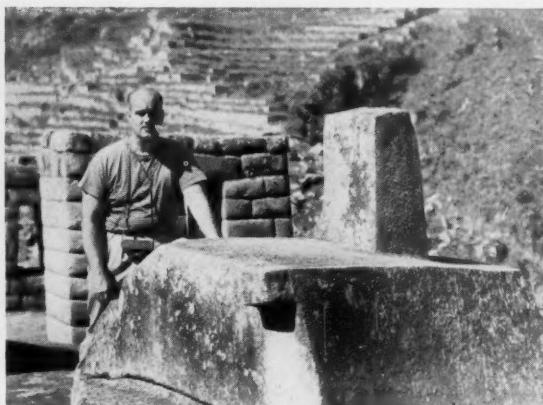


nonetheless, that Machu Picchu was unique. Searching into Inca history, he found that when the Incas were hard-pressed, early in their history, they retired from the Cusco region to a place called Tampu Tocco and there preserved their way of life until, conditions changing, they once more descended to reconquer Cusco.

Traditionally, this Tampu Tocco is placed by all chroniclers in the province of Paruro, south of Cusco; Dr. BINGHAM argues that only the conditions suggested by Machu Picchu (even though this be in a different direction and completely different milieu) agree with the legend of Tampu Tocco. So to Dr. BINGHAM, Machu Picchu is pre-Inca: "I am convinced that the name of the older part of Machu Picchu was Tampu Tocco . . .

and that here was the capital of the little kingdom where during the centuries—possibly eight or ten—between the Amautas and the Incas, there were kept alive the wisdom, skill and best traditions of the ancient folk . . ." This is the controversial section of *The Lost City of the Incas* and it will draw "professional fire," since the theory runs in the face of a fairly well-established Inca chronology which entirely precludes BINGHAM's conclusions.

This is unfortunate. For *The Lost City of the Incas*, intended primarily for a non-technical audience, fills in a gap for those interested in Peruvian archaeology and the fabulous city of Machu Picchu. The discovery and the uncovering of these ruins, hanging 2000 feet above the roaring Urubamba, still stands as the most thorough piece of archaeological work yet undertaken in Peru. The ruins, under HIRAM BINGHAM's direction, were cleared and skillfully mapped, graves were systematically exam-



The author at the Intihuatana of Machu Picchu, August, 1948. The Intihuatana, much-disputed "hitching-place of the sun," has been assumed to be a sort of sun dial for calendrical observations. It appears frequently in Inca cities: Machu Picchu, Pisac, and Ollantaitambo. Dr. JOHN ROWE does not believe that it could have been used for solar observations ("too short and too irregular"). In Machu Picchu it was placed in a dramatic setting, and a temple was built around it. (Christine von Hagen photo.) For a view of Mr. von Hagen from another angle, see page 31.



Above: Atop Huayna Picchu is another section of the city, placed under solid granite walls. To reach it, one must climb perpendicularly for a thousand feet. One of BINGHAM's men almost lost his life during its discovery.

Left: Machu Picchu. Looking through the city gate at the rock of Huayna Picchu, which towers above the city.

ined, osteological remains were reported on by a specialist, and an excellent metallurgical study was made of the bronze found there. No single area of all the Peruvian Andes was as carefully explored as were the Urubamba, Apurimac and Aobamba valleys; and, although Machu Picchu is the culmination of those five years of intensive explorations, it was only a small part of the work performed by HIRAM BINGHAM.

The going was tough then. Everything was by mule and foot, and Peru was a chaos of disorganization. Yet an amazing amount of work was accomplished and had HIRAM BINGHAM cast aside his modesty and merely listed them in this book, it would have been an astounding index to these historical expeditions. And before Peru, HIRAM BINGHAM had made stern preparation. He had traced the colonial trade routes from Argentina to Chile, and to test SIMON BOLIVAR's campaigns for independence, he had made a horrendous trip by mule from Colombia to Venezuela. His explorations for the search of the

Inca's last capital in the rain-engulfed Andes, through a desolate wilderness of trees and chasms, can only be fully appreciated by those who have undertaken similar journeys.

Modern archaeology in South America really begins with HIRAM BINGHAM, and, although MAX UHLE had begun some years before 1911 to scrape the detritus off the coastal civilizations, the stimulus of the scientific approach begins with BINGHAM. It was from these successive expeditions, which culminated in the uncovering of Machu Picchu, that South American archaeology received its needed stimulus. Since that period, investigators have flooded the Andean areas—as witness the reports in the monumental *Handbook of South American Indians* (still being issued); and so out of the chaos of fable the Inca achievement is emerging in fact.

HIRAM BINGHAM, a legend in his own time, has taken his place beside those other discoverers of Lost American Cities: STEPHENS, CATHERWOOD, SQUIER and MAUDSLAY.

BYZANTINE RESEARCHES IN NORTHERN GREECE

By S. Pelekanides*

Ephor of Byzantine Antiquities in Northern Greece

Because of the unsettled conditions prevailing in northern Greece the greater part of the work connected with the excavation of Byzantine sites was done in the city of Salonica. The most important excavations undertaken during 1945-47 were the following:

1) ST. DEMETRIUS. The work for the excavation of this monument, in-



FIG. 1. The basilica of St. Demetrios, Salonica, from the south, immediately after the fire.

terrupted in 1926 for financial reasons, was resumed immediately after the end of the war, following plans laid down by a committee appointed by the Archaeological Council of the Ministry of Public Instruction. It began with the restoration of the columns of the two small apartments for women, and continued with the complete renovation of the crypt of the basilica, which is the oldest part of the monument. Next we turned our attention to the western side of the church, providing it with rows of windows of three or five foils each, both inside and outside, and covering the entire section of the women's apartment above the narthex. Then we proceeded with the restoration of the northern side and the other parts of the basilica. However, the central nave presented much greater difficulties, since the fire of 1917 had rendered it almost beyond repair. Yet, here too, despite these difficulties, the

work of restoration proceeded satisfactorily, and most of the columns, bases, capitals, arches, skylights, archivolts, pedestals, etc., were replaced by new ones similar to the old in material and dimensions.

Close examination of the plot of land north of the basilica brought to light many additional buildings adjoining the church. These we hope to be able to restore completely in the very near future. Likewise, on the eastern part of the southern colonnade we discovered a wall painting in perfect condition, dating from the twelfth century, and representing St. Lukas Steiriotes. On the two exterior sides of the concha of the altar were discovered: 1) a wall painting representing the "Trimorphon"; 2) a mosaic of St. Demetrios (the face is destroyed), with a dedicatory inscription.

The excavations in the floor of the church disclosed the existence of a number of Roman sewers and water pipes which seem to confirm the tradition that the basilica of St. Demetrios was built between "the bath and

the stadium." Remains of the two structures are now visible, and corroborate the written tradition about the topography of the church.

In connection with the work on the basilica of St. Demetrios, attention was also paid to the small basilica of St. Euthymius, adjoining the northeast wing of the great basilica. Its wall paintings, portraying the life, miracles, and death of St. Euthymius, were restored. The work on this chapel disclosed that a part of the eastern side of the great basilica was built on a large and imposing staircase which led to the eastern gate of the church. Careful observation of the wall paintings revealed that the extant ones, which date from 1303 A.D., are not the first but the second, and this discovery requires that the date of the building of the chapel be placed at least at the end of the twelfth century, and not at the beginning of the fourteenth, as it is done today.

2) THE CHURCH OF ACHEIOPOLITES (Eski Juma). The removal, in 1946-47, of the loose soil which



FIG. 2. The basilica of St. Demetrios from the south, following the reconstruction.

* Translated by PROCOPE S. COSTAS.

surrounded the church disclosed, at a distance of two to three meters to the northeast of the basilica, the presence of a half-ruined vault which proved to be part of a group of buildings on the north side of the basilica.



FIG. 3. Basilica of St. Demetrius, Salonica. View of the north wall, interior, before reconstruction.

To the northeast of the basilica there was discovered a group of buildings whose floors are covered with mosaics and tiles of marble, as well as a concha the opening of which suggests the existence of a huge building. Because of the surrounding houses, some of which date as far back as the Turkish occupation, it was not possible to continue the excavations. As in the case of St. Demetrios so also here, we are in the presence of buildings contiguous to the basilica. These buildings communicated with the church through a trefoil arch in the eastern wall of the northern aisle which later was built in to permit the erection of a chapel. Traces of this chapel, as well as remains of its wall paintings, exist in sufficient quantities so that its restoration today is possible and advisable.

3) ST. SOPHIA. It is a well-known fact that this church suffered many changes, especially in its exterior, from the time the city was occupied by the Turks to its liberation by the Greek army (1430-1912 A.D.). But even its interior has undergone many changes, since the marble slabs covering the walls were used to repair

the floor-pavement. Most of these slabs were destroyed in the course of time and were replaced by concrete. To save the remaining ones, as well as the carved images on the floor, it was decided to pave the entire central aisle of the church with square slabs of marble and to reinforce the central part of the church directly below the mosaicked dome with a keystone, an exact copy of the one discovered by the Americans in the basilica at Olynthus, which happens to have been built at the same time as St. Sophia.

Some very interesting discoveries were made in the course of the excavations here: 1) a small part of the old floor of the church paved with rectangular and triangular white and green tiles placed rhomboidally; 2) a large number of early Christian carved pieces; 3) in the narthex, three tombs, apparently of bishops or priests, containing a few pieces of fringes of vestments, representing, in a circle, Christ and various saints. From the workmanship of these woven pictures we can place the date of these tombs between the eleventh and twelfth centuries.

4) ST. CATHERINE. Although this is one of the most interesting Byzantine churches of the second millennium A.D., it is almost unknown to most people and neglected by those who know of its existence. During the excavations, which began in 1946, it was ascertained that a great part of the outer walls of this building had been torn down by the Turks and replaced by openings with pointed arches, and that the outer cornices and most of the tile work had been removed. It was decided: 1) to tear down all changes made by the Turks; 2) to restore the original architectural forms of the monument.

First we restored the outer appearance and the roof of the building. All Turkish additions were eliminated. The ruined parts of the domes were restored, as were also the trefoil and bifol windows of the tympanum. The 48 windows of the 5 domes, closed by the Turks, were opened, and the gaps in the roof were filled up with Byzantine tiles obtained from the old houses of Salonica. In addition, a large amount of earth, which had surrounded the monument to a height



FIG. 4. Basilica of St. Demetrius. View of the north wall, exterior, after reconstruction.

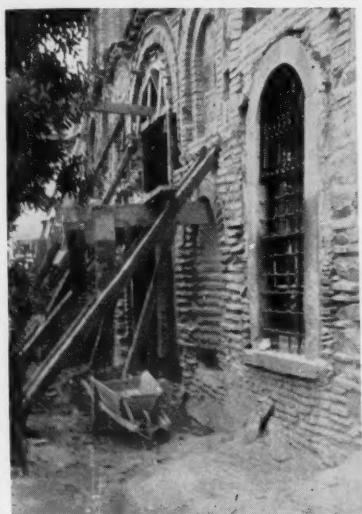


FIG. 5. South side of the church of St. Catherine, Salonica, following removal of Turkish masonry, before reconstruction.

of from 0.90 m. to 1.20 m., was removed, thus giving the building an imposing and graceful appearance. I hope that this year it will be possible to restore the west side as well, and so complete the outside restoration of the monument.

Before its renovation, the interior of the building gave the impression of a Turkish mosque. But the opening of 62 windows (there are still 9 unopened) provided abundant lighting

and changed the aspect of the interior completely.

A great part of the wall paintings of the domes has been uncovered. They represent the prophets, and above them the orders of the angels surrounding the figure of the emperor, destroyed today. These paintings are very well preserved, and constitute valuable and important samples of the work of the Macedonian School.

Much remains to be done in the interior of the building, owing to the vandalism of the Turks who removed many parts of the structure and replaced them with material of inferior quality and workmanship. I hope that the work will progress satisfactorily this year and that I will be able, before long, to publish the results of these excavations in a separate study.

5) CHRISTIAN TOMBS OF ODOS LANGADA. Excavations conducted in 1946 in Odos Langada brought to light a series of Christian tombs containing important wall paintings in excellent condition. All of these are vaulted tombs and their wall paintings, probably dating from the period of the War of the Icons, represent crosses, inside multi-colored circles, various animals and many plants and flowers. Other paintings are purely geometric, in the shape of a group of squares covering the entire surface of the walls.

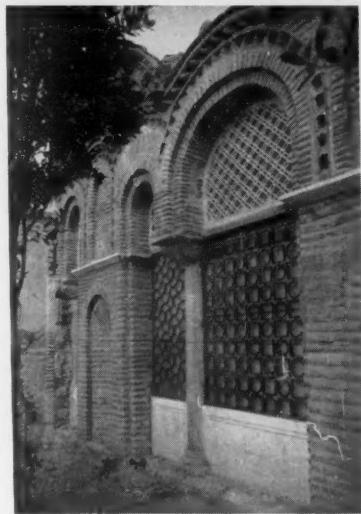


FIG. 6. South side of St. Catherine, after reconstruction.

The study of the area in which these tombs were found will perhaps shed considerable light on many problems relating to the topography of ancient Salonica. I believe that this place is part of a Christian cemetery because the district where the tombs were found is located immediately outside the western walls of the city where similar tombs were discovered, even before, though without wall paintings. Furthermore, a detailed and serious examination of these monuments might shed sufficient light



Figs. 7 and 8. Left: Christian tombs on Langada St., Salonica. General view of the row of tombs. Right: Wall painting in one of the Christian tombs.



on the relations between the East and Salonica, a problem which would require a long and extensive study.

This, briefly, is the work we did in Salonica since the war, and especially during the last two years. There is still much to be done, and perhaps what is most needed today is the for-

mation of a group of archaeologists who, working in close cooperation with each other and with the best modern means at their disposal, will be able to obtain most satisfactory results.

Salonica is for the student of Byzantine archaeology, art and culture what Delphi, Olympia and Epidaurus

are for the student of classical antiquity. It is our fervent hope that some day it will be possible to establish in Salonica an Institute of Byzantine Studies. Then, surely, Salonica, and Greek Macedonia in general, will be revealed to science as a new and unknown world of art.

ARCHAEOLOGICAL NEWS

British School at Rome

J. B. WARD PERKINS, director of the British School at Rome, writes:

"The British School at Rome, like its sister institution, the American Academy, caters both for practising students in the arts and for research students in archaeology, history and history of art. It came through the war unscathed; but it has been a slow business getting going again after six years of total inactivity, and this session is the first in which, with a complement of both first- and second-year students, we may consider ourselves once more a fully going concern. Even so the war years still make themselves felt, and we have no second-year Rome Scholar in the classics. The Rome Scholars are the equivalent of the Fellows of the American Academy, that is to say they hold scholarships on the foundation, and there should be four in residence at any one time in addition to eight artists. This year we have MICHAEL BALLANCE working on Roman bridges in Italy; and Miss JOYCE REYNOLDS, Rome Scholar 1946-8, will be returning in the spring to complete her work on the classical inscriptions of Tripolitania, which she is editing in collaboration with myself. Our two medievalists are both working on historical subjects.

"The visiting lecturer this session has been Professor E. FRAENKEL, Corpus Christi Professor in Latin at Oxford, who has recently left after a three months' stay; and in addition to our own Scholars we have a number of resident students, most



HUGH O'NEILL HENCKEN
Director of the American
School of Prehistoric Re-
search, newly elected Presi-
dent of the ARCHAEOLOGICAL
INSTITUTE OF AMERICA.

of them holders of university research grants. These include Miss BERTHA TILLY, who is following up her recent book on Vergil's Latium with a topographical study of the Ager Faliscus; and Miss ERNA MANDOWSKY, studying the restoration of classical sculpture in the Renaissance, with particular reference to the Medici collection. We expect others in the New Year, two of them from the British School at Athens studying Etruscan subjects; and a third whose interest is Jewish catacombs.

"The first post-war volume of the School's *Papers* appeared in October and the second is now in proof. The

latter will include the publication of some seventh-century grave material found during the war near Ardea; a survey of the great pilgrimage church of St. Menas in the western desert of Egypt, near which I had the fortune to be stationed in the months before Alamein; a brief account of the test-trenches, conducted jointly with the Swedish Institute, beneath the floor of the church of San Salvatore at Spoleto; and a selection of transcripts of documents from the destroyed Angevin archives of Naples.

"The high light of our archaeological year has undoubtedly been our summer school in Tripolitania. This was designed to give field experience in the Mediterranean to students from the English universities; and our work was strictly complementary to that of the previous Italian excavations. We opened up no fresh areas; but by deep stratigraphic digging and detailed survey within the excavated zone at Sabratha, we were able to throw a lot of fresh light on buildings already excavated, outstanding among them the Basilica and the East Forum Temple. We did not touch the presumed site of the earliest Punic settlement; but from the second century B.C. onwards we got a continuous series both of buildings and of pottery. The latter included a great deal of imported material, including red-glazed and black-glazed wares, and the series should be most useful for the comparative study of such wares on other sites.

"The work at Sabratha was under the charge of Miss KATHLEEN KENYON, of the London University

Institute of Archaeology. At Lepcis Magna our Rome Scholar in architecture, ROY FRASER, did a detailed survey of the Hunting Baths, a remarkable third-century structure excavated in 1932 by the Late Professor GIACOMO GUIDI. This survey will appear in the forthcoming volume of *Archaeologia*. In the interior RICHARD GOODCHILD, who has recently joined our staff as Librarian, and myself were able to continue our research into the Tripolitanian *limes*, and were lucky enough to locate, and to survey, two new stations, with inscriptions which throw fresh light on the organization of the frontier under Septimius Severus and in the mid-third century. Altogether a varied programme, and one that has given us a lot to work on. Tripolitanian archaeology has all along been hopelessly understaffed in proportion to the work attempted, and there is a tremendous back-log of survey and publication still to be confronted.

Professor CAPUTO, our Italian colleague, is doing manful work; and we hope, funds and all else permitting, to join him next year in a further programme of architectural survey.

"To conclude this brief survey of our activities, I should add that, in memory of the late Mrs. ARTHUR STRONG, who died in Rome during the war, the School is sponsoring a re-edition, with completely new illustration, of her classic work on *Roman Sculpture*. The revision of the text is in the hands of Miss J. M. C. TOYNBEE."

C. A. S.

According to an announcement of December 26, 1948, the University of California will establish, as an affiliate of its department of anthropology, a new agency to be known as the California Archaeological Survey, financed initially by state appropriations. The Survey will both ini-

tiate research in collaboration with the department of anthropology and correlate the past and future investigations of other organizations. There is also a plan—and this is of interest to all—to keep in readiness an "emergency task force," so called, to make prompt examination of accidental finds, as in the course of road and dam construction.

Byzantine Studies

"The VIth International Congress of Byzantine Studies which met in Rome in September, 1936, had voted, upon the invitation of the French government, to hold its next meeting in Algiers in October, 1939. This meeting was prevented by the outbreak of the war. Two years after the end of hostilities, a project was organized by Professor HENRI GREGOIRE for an international conference of Byzantine studies to be held in Brussels. It was decided that the

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In celebration of the bicentennial of the first excavations at Pompeii, the Smith College Museum of Art held, from November 18 to December 15, 1948, an exhibition of Pompeian art which included objects from a number of museums and private collections and particularly five pieces from the silver treasure of Boscoreale, lent by the Louvre Museum. Above, left, is a view of part of the classical section, showing on the left the portrait of Menander lent by the Museum of Fine Arts, Boston, and in the case three of the Boscoreale pieces; at the right is one of the magnificent silver cups from Boscoreale, photographed by SHERLEY HOBBS.

VIth congress, originally scheduled for Algiers, would meet at Paris in 1948, preceding the meeting at Brussels, which thus would numerically be the VIIth International Congress of Byzantine Studies. The two Congresses preserved autonomy but worked in close collaboration. The subjects proposed for the attention of the two conferences were divided between the two sponsors.

"The Byzantine Institute of America offered to the Organization Committee of the Paris Congress the use of its Paris Library with its Staff and its share in the financial support of the enterprise.

"Of the three hundred and eighty scholars who announced their proposed participation in the Paris Congress, only about two hundred and fifty were able to overcome various obstacles and to arrive in Paris in time for the opening session.

"The inauguration of the Congress took place on July 27th in the Institute of Art and Archaeology of the University of Paris. The meetings of the four Sections were held twice daily and about one hundred communications were heard and discussed during the week. More than half

of the papers were devoted to archaeological discoveries and to aesthetic evaluations and monumental aspects of Byzantine Art; others were devoted to new or unpublished data and interpretations of Byzantine History, Civilization and Religion.

"Art and Archaeology were enriched by discoveries in Palestine, Syria, Turkey, Italy, and the Balkans. Illuminated manuscripts of the Latin kingdom of Jerusalem, reflecting the Western interpretation of Byzantine tradition, were presented by HUGO BUCHTHAL. EJNAR DYGGVE presented his study of the reconstruction of the Constantinian Basilica of the Anastasis. The mosaics of the Great Palace of the Byzantine Emperors and the recently uncovered portraits of the Patriarchs in Hagia Sophia in Istanbul were the subjects of communications by GERARD BRETT and THOMAS WHITTEMORE.

"In Italy, new light was thrown on Paleo-Christian architecture and fresco painting by studies of hitherto unknown churches in the Po Valley, notably the frescoes in the small eighth-century church of Castelseprio, near Milan. The Congress de-

plored the sudden death during its session of the author of a fundamental survey of this monument, Dr. ALBERTO DE CAPITANI D'ARZAGO, whose communication was read by a colleague.

"New elements were also revealed in the History of Church and Civil Architecture in Syria by the work of French archaeologists. Some philosophical aspects of Byzantine iconography were developed by ANDRE GRABAR in his communication on the representation of the Intelligible. A detailed analysis of an Armenian Royal Chronicle of Cilicia was made by ROBERT P. BLAKE. Ecclesiastical geography, dogmatic history, the church calendar, and the history of the schism, were subjects presented in the Section on Religion, whereas international relations and various economic, administrative and cultural aspects of Byzantine history were discussed in the Historical and Law Sections.

"The 30th of July, a concert of ancient Byzantine Religious music was given by the Hellenic pupils of Professor PALLIOURAS who presented several renditions of this as yet little-known branch of Byzantine Art. Re-

ceptions were organized by the Government, Municipality, and private individuals. The delegates had the opportunity to visit otherwise inaccessible collections such as those of the Count BLAISE DE MONTESQUIOU FEZENSAC, JEAN POZZI, and others.

"Professor WHITTEMORE, in the name of the Byzantine Institute of America, offered a luncheon to the leading members of the national delegations. The Institute of Byzantine Researches of the Assumptionist Fathers, recently expelled from Rumania, celebrated the memory of the founder of its review, *Echos d'Orient*, Mgr. LOUIS PETIT, in a special reception.

"The Bibliothèque Nationale offered an exhibition of its collection of Byzantine illuminated manuscripts; and the historical part played by France in promoting Byzantine Studies in Europe was marked by an exhibition of editions of Byzantine

authors and works on Byzantine subjects printed in France from 1512 to 1811. Parchments, chrysobullae and seals belonging to the period of the Latin Empire of Constantinople were exhibited at the Archives Nationales.

"Most of the delegates who took part in the Paris Congress proceeded to Brussels, there joining new arrivals. The Congress held its inaugural meeting August 5th in the Palace of the Academics, and continued its sessions until the 16th of August. Eighteen countries were represented, the delegates of Bulgaria, Spain, and Poland, at the last moment not being able to arrive. Russia had declined invitations to both Congresses.

"As in Paris, the United States was represented by Professor ROBERT P. BLAKE of Harvard University, Professor THOMAS WHITTEMORE, Director of the Byzantine Institute of America, Miss SIRARPIE DER NERESSIAN of the Dumbarton Oaks

Research Library, Professor MILTON V. ANASTOS of Dumbarton Oaks, MARVIN C. ROSS, Director of the Walters Art Gallery, Baltimore, Dr. JOHN S. THACER, Director of the Dumbarton Oaks Research Library and Collection, Professor ERNST KITZINGER of Dumbarton Oaks, Professor PETER CHARANIS of Rutgers University, and Professor ROBERT S. LOPEZ of Yale University.

"At the closing meeting the delegates elected members of a Provisional International Committee for Byzantine Studies, to act in consultation with UNESCO. Professors BLAKE and WHITTEMORE were appointed to represent the United States on this Committee. The invitation received by the Assembly from the Austrian Government was accepted and the city of Vienna designated to be the place of the next, VIIIth Byzantine Congress, which it is hoped may be held in 1950.

The Last Refuge of Sanity? Ecuador and the Galápagos Islands

by Victor Wolfgang von Hagen

author of MAYA EXPLORER

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OFF the coast lie the Galápagos Islands, vivid, lonely, stark rocks in the endless Pacific. Although South Seymour Island was occupied by the United States to safeguard the Panama Canal during the war, the Galápagos are today peopled mainly by the lost-world reptiles, the famed giant land tortoises, the unusual birds, the fierce-miened iguanas—all slowly disappearing, leaving behind remnants of a forgotten land.

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"Count J. DE BORCHGRAVE d'ALTONA organized a series of excursions throughout Belgium from August 10-15, to visit museums, private collections and monuments of Byzantine origin or influence. In Brussels the delegates could study specimens of Byzantine or Western Mediaeval tissues, ivories, enamels and sculptures in the Royal Museums and in private collections such as the one belonging to M. and Mme. STOCKLET, one of the richest in the world.

"The papers of both Congresses will be published separately, with the financial help of UNESCO, as *Acts of the Congresses*."

BORIS N. ERMOLOFF
Librarian,
The Byzantine Institute,
4 rue de Lille, Paris VII, France

Labranda

The January 15, 1949, issue of the *Illustrated London News* contains an illustrated account, by AXEL W.

PERSSON of the University of Uppsala, of the fascinating discoveries made by a Swedish expedition in 1948 at the southwestern Asia Minor site of Labranda (: *labyrinthos*). Labranda is not accessible to motor transport; but occasional archaeologists have climbed the mountain trails to the ruins and have reported well preserved Hellenistic or late Classical buildings ("Temple A," "Temple B") and fragmentary inscriptions, while literary sources speak admiringly of the temple of Zeus Labrandeus.

The Swedish explorers showed that neither "Temple A" nor "Temple B" is a temple, while to the north they identified as the real temple of Zeus a peripteral (6 x 11) Ionic temple with architrave dedications by Idrieus, younger brother and successor of Maussollos (so spelled on a Labranda architrave), king of Caria 351-344 B.C. PERSSON refers this temple to the drawing-board of Pythios, architect of the tomb of Maus(s)ol(1)os, and of

the temple of Athena at Priene which the Labranda temple "strikingly resembles."

East of the temple of Zeus was found a fourth-century stoa, a row of shops behind a Corinthian colonnade, rebuilt in Roman times, with fragmentary sculptures and inscriptions. South of the temple was another imposing building of heavy stone construction and numerous chambers, which PERSSON is tempted to call a palace.

In all about forty inscriptions were found, including five new royal letters to add to Professor WELLES' collection, and what will seem to some specialists the more priceless find of all: two fragments of clay tablets, both inscribed in the rare Carian script, while one has on its reverse characters in an alphabet not previously recorded. PERSSON assigns these tablets, not without diffidence, to the eighth century B.C., and the palace to the Carian thalassocracy (730-671 B.C.?).



PROGRAM

1. Pompeii
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4. Cumae
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7. Paestum

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No prerequisites are necessary to enroll in the various courses other than an interest in the classics. It is expected that students have a knowledge of ancient history sufficient to give an intelligent background to the study of the sites.

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Due to possible changes in local Italian conditions the School reserves the right to alter the program without notice.

BRIEF NOTICES OF RECENT BOOKS

A Study of Archaeology, by WALTER W. TAYLOR. 256 pages, 4 plates. American Anthropological Association, Bloomington 1948 (Memoirs of the American Anthropological Association, No. 69) \$4

The *Study* is mainly concerned with Americanist research, which has usually cleaved to Anthropology. Here TAYLOR finds important shortcomings which, he urges, are the result of the confusion of aims, scope, and methods. He carefully analyzes archaeology's proper place and full purpose and suggests a far-reaching program for achieving these expectations to the fullest.

TAYLOR's main objection to present New World archaeology is that it limits itself to what he calls "mere chronicle." Emphasis has been heavily—almost exclusively—upon showing the spatial and temporal connections of the archaeological materials recovered at any given site. The (Americanist) archaeologist gives us in great detail why Level I at Site "X" is pre- or post-Level III at Site "y"; he laboriously shows us that the geographic distribution of these related types of cultural objects is such-and-such. These questions, TAYLOR points out, are "outside" the way of life of the ancient people concerned, external to the local, immediate cultural implications or meanings of the finds.

"Where" and "when" work is necessary. (Archaeological treasure hunting, of course, produces much less.) But what about the way of life of the people who left us these, the durable traces of their culture? We can not only say more about the cultures of the past from their material remains but even possibly probe further such questions as the change and development of institutions. The evidence of these fuller meanings is in the objects unearthed and their relationships, but it will be overlooked if the archaeologist is not aware of it.

The "shortcomings" of present work are illustrated by referring to the research of several archaeologists eminent in the American field. TAYLOR's corrective program he calls the "conjunctive approach," which is too involved for a review of these proportions. Whether he hits the high mark he sets for himself remains for time and actual testing to tell. Although the reaction of New World archaeologists as a whole to the *Study* has not yet had time to crystallize, one Americanist, whose work TAYLOR considered at length, told this reviewer that he thought the criticism largely just and anticipated constructive results.

The program TAYLOR recommends is ambitious, including not only technical, methodological, and theoretical suggestions, but even "practical" comments on the financing of archaeological work. Sometimes the going is heavy and even tedious, with repetitions and too many illustrations of his points. But these faults should not obscure the importance of the work, which is a thorough statement of some basic questions in modern archaeology.

JAMES B. WATSON
Washington University

Foundations in the Dust, a Story of Mesopotamian Exploration, by SETON LLOYD. xii, 237 pages, 6 plates, map. Oxford University Press, London 1947 \$4.50

This unpretentious book tells the story of the early British archaeological explorers in Mesopotamia. Students of the antiquities will enjoy reading the personal background of the early investigators and their organizational problems both in the financial sphere and in the field. The general reader will find the personal material less arresting than SCHLIEMANN's autobiography, for example, and he will find that the style is not

conducive to rapid reading, but he will have the satisfaction of being able to understand material which is not diluted to a juvenile level.

The author deals with the excavations themselves in a general way, but sufficiently to show clearly the evolution of archaeological method and purpose in the last hundred years: promiscuous quarrying of art objects for foreign museums gradually gave way at the beginning of the twentieth century to the search for historical information from all sources. Mr. LLOYD, who is attached to the Iraq Department of Antiquities, is properly sensitive to the ethical problems connected with the early excavations. This is perhaps the most interesting phase of his book, and it will leave with all readers a keener regret for past errors and a better understanding of the need for proper conservation of archaeological sites today.

Local color and comments on native psychology enliven the narrative. The map and the chronological table are useful; it is a pleasure to find a competent person who also has the courage to set down an outline of Mesopotamian chronology from neolithic times to the seventh century A.D.

CONSTANTINE G. YAVIS
Saint Louis University

Roman Portraits, by GISELA M. A. RICHTER. Metropolitan Museum of Art, New York, 1948 \$1.50

This book contains an Introduction in five pages, which may be described as a short history of Roman portraiture as exemplified in the Metropolitan; 6 pages of notes, chiefly bibliographical; and 56 pages of illustrations in half-tone, with captions that sometimes grow into brief discussions. 110 portraits, "practically our whole collection," are shown. About two thirds of the portraits are sculptures in stone or bronze; the remainder are

chiefly coins or carved gems. In many cases there are several illustrations of one portrait, and they are generally quite satisfactory, though the notable bust of Caligula (No. 36) loses much of its modelling in the picture.

There is not a quarter-century between 50 B.C. and A.D. 350 from which the Metropolitan does not have good examples, and a typical head of Constantine closes the series. Naturally the representation is not always equally good; it is meagre for the important and productive reign of Hadrian. Although the collection does not include many pieces of the very first rank, the general quality is high. Perhaps the most notable piece is a head of Caracalla, which has appropriately been chosen to decorate the cover of the book; a head of Lucius Verus, though from a relief, is a worthy second; two bronze statuettes, though not particularly fine portraits, are rarities. The caption of No. 32 contains a phrase rarely found in museum publications, "not certainly ancient"; perhaps this is an indication of the author's mellowing years.

This book is the latest of a long series in which Miss RICHTER has dealt with many phases of classical archaeology. The volumes vary widely in size and some are addressed to wider circles of readers than others, but the scholarly quality is always high and the writing is always sober and clear. The present book serves

the purpose of a catalogue for specialists, and general readers can pleasantly gain from it a good idea of the general character and historical development of Roman portraiture.

F. P. JOHNSON

University of Chicago

The White Goddess, by ROBERT GRAVES. xii, 412 pages. Creative Age Press, (New York) 1948 \$5

This book is an amazing accumulation of fact and fancy drawn from Celtic, Greek, Judaic, Mesopotamian and Egyptian literature and mythology and thrown together in wild confusion meant to give "a historical grammar of poetic myth" and to prove that "pure poetry" has only "a single language and a single infinitely variable theme." The White Goddess, a name that includes all conceivable Goddesses old and new beginning with Ishtar, Isis, Hathor, the Snake Goddess of the Cretans, Rhea, Hera, Hecate, Demeter, Persephone, Aphrodite, and ending with Mediaeval witches, Keat's Belle Dame sans Merci and Coleridge's woman dicing with Death, and her ritual, have provided and are still providing this theme.

The student of the ancient world will be especially interested to read that about 1472 Britain and Ireland were invaded by the Greek Danaans,

who reached those remote islands by way of Denmark, to which they gave their name; that the Danaans, who were also Pelasgians, were expelled from Greece by an invasion of Syrians; that the same Danaans, though Pelasgians, spoke Greek and had simplified the Cretan syllabary into a sacred alphabet which found its way to the Phoenicians established in Egypt who later brought it back to Greece; that the Gorgon myth is in reality a description of the "breaking of the Argive Triple Goddess' power by the first wave of the Achaeans"; that the Etruscans were Cretans; that every initiate in the "Eleusinian mysteries went through a love rite with her (the Goddess's) representative after taking a cauldron bath."

These and many other wondrous conclusions the reader will find in this labyrinthine treatise. And if he were to ask, how these conclusions were reached, he would find the explanation in the words of the author: that he had "known the answers beforehand by *poetic intuition*. Really," he adds, "all that I needed to do was to verify them textually." A simple process indeed, which, however, will explain the maze that is presented as a "historical grammar of poetic myth." Perhaps the reader has to read the statements printed on the jacket to find out what the author is trying to do.

G. E. M.

NEW BOOKS

Selected at the editorial offices from various sources including bibliographical publications, publishers' announcements, and books received. Prices have not been confirmed.

BAKALAKIS, G. *Hellenika Trapezophora*. (In Greek) 55 pages, 4 plates. Thessaloniki 1948 (University of Mississippi and Johns Hopkins Studies in Archaeology No. 39, edited by DAVID M. ROBINSON) \$2.00

BASANOFF, V. *Evocatio, étude d'un rituel militaire romain*. 228 pages, ill. Presses Universitaires de France, Paris 1947 (Coll. Bibl. de l'Ecole des Hautes Études, sciences religieuses, LXI) 400 fr.

BAYNES, NORMAN H. *Byzantium: An Introduction to East Roman Civilization*. 464 pages, ill., maps. Clarendon Press, London 1948 21s.

BELL, H. I. and C. H. ROBERTS. *A Descriptive Catalogue of the Greek Papyri in the Collection of Wilfred Merton*, F. S. A., Vol. I. Walker, London 1948 £12 12s.

BENNETT, WENDELL C., GEORGE D. HOWARD, and GORDON R. WILLEY. *Northwest Argentine Archaeology: Lowland Argentine Archaeology*. 170 pages; 50 pages, ill., map. Yale University Press, New Haven 1948 (Yale University Publications in Anthropology, nos. 38, 39) \$3.00

*BINGHAM, HIRAM. *Lost City of the Incas. The Story of Machu Picchu and Its Builders*. xviii, 263 pages, 64 plates. Duell, Sloan & Pearce, New York 1948 \$5.00

BRAIDWOOD, ROBERT J. *Prehistoric Men*. 117 pages, ill. (Chicago Natural History Museum, Popular Series, Anthropology, No. 37) \$0.50

BRUNTON, GUY. *Matmar: British Museum Expedition to Middle Egypt, 1929-1931*. viii, 107 pages, ill. Quaritch, London 1948 £2

BURN, A. R. *Pericles and Athens*. 253 pages. Hodder & Stoughton, London 1948 5s.

COHEN, MORRIS R. and ISRAEL E. DRABKIN. *A Sourcebook in Greek Science*. xxi, 579 pages, ill. McGraw-Hill, New York 1948 \$9.00

COLLINGWOOD, R. G. *A Guide to the Roman Wall*. 32 pages, ill. A. Reid, London 1948 2s.

COON, CARLETON STEVENS. *A Reader in General Anthropology*. 634 pages, maps. Holt, New York 1948 \$5.00

COWELL, F. R. *Cicero and the Roman Republic*. 323 pages, ill., maps, diagrams. Chanticleer Press, New York 1948 \$5.00

DUNBabin, T. J. *The Western Greeks*. xiv, 504 pages, ill. Clarendon Press, Oxford 1948 35s.

FRANKFORT, H. *Ancient Egyptian Religion: an interpretation*. 172 pages. Oxford University Press, London 1948 16s.

FRIEDLANDER, PAUL and HERBERT B. HOFFLEIT. *Epigrammata: Greek Inscription in Verse from the Beginnings to the Persian Wars*. 198 pages. University of California Press, Berkeley 1948 \$5.00

GERSTER, ERNST WILHELM. *Das Dionysos-Mosaik in Koeln*. 17 pages, 32 plates. Bonn 1948 \$3.00

GRUNDY, G. B. *Thucydides and the History of His Age*. Vol. I, 553 pages, ill. Vol. II, 256 pages, ill. Blackwell, London 1948 25s.

HAMILTON, EDITH. *The Greek Way to Western Civilization*. 190 pages. New American Library, New York 1948 \$0.35

HOME, GORDON. *Roman London, A.D. 43-457*. 302 pages, ill. Eyre & Spottiswoode, London 1948 18s.

International Association for Classical Archaeology. *Fasti Archaeologici. Annual Bulletin of Classical Archaeology*. Vol. I, 1946. xix, 404 pages, 107 figures in text, 10 maps, 4 plans. Sansoni, Florence 1948 (\$12.00)

IVAN, D. MARGERY. *Roman Ways in the Weald*. xvi, 228 pages, ill., maps. Phoenix House, London 1948 25s.

IVANKA, ENDRE. *Hellenisches und Christliches im frühbyzantinischen Geiste*. 119 pages. Herder, Vienna 1948

KARO, GEORGE. *Greek Personality in Archaic Sculpture*. 361 pages, ill. Harvard University Press, Cambridge 1948 (Martin Classical Lectures, vol. 11) \$4.00

KELLY, JOHN FREDERICK. *Early Connecticut Meetinghouses; being an account of church edifices built before 1830, based chiefly upon town and parish records*. Vol. I, 380 pages, vol. II, 373 pages, ill., map, diagrams. Columbia University Press, New York 1948 \$4.00

KELSO, JAMES L. *The Ceramic Vocabulary of the Old Testament*. 48 pages, 2 plates. American Schools of Oriental Research, New Haven 1948 (Supplementary Studies, nos. 5-6) \$1.25

KOTRATSCHEK, K. *Die Säulenordnungen der Antike und Renaissance*. 80 pages, 59 plates. Prachner, Vienna 1948 (Architektonische Formenlehre, I)

LAPALUS, E. *Le Fronto Sculpté en Grèce, des origines à la fin du IV siècle. Études sur les origines, l'évolution, la technique et les thèmes du décor tympanal*. 487 pages. Paris, 1947 (\$4.50)

*LLOYD, SETON. *Foundations in the Dust: A story of Mesopotamian Exploration*. xii, 237 pages. Oxford Press, London 1947 (\$4.50)

PAOLI, U. E. *Uomini e cose del mondo antico*. 340 pages. Le Monnier, Florence 1947

RICE, DAVID TALBOT. *Byzantine Painting and Developments in the West before A.D. 1200*. 66 pages, ill. Transatlantic Arts, Forest Hills 1948 \$2.75

RIS, P. *Den Etrusiske Kunst*. 232 pages. Fremad, Copenhagen 1948

ROSE, H. J. *Ancient Greek Religion*. 160 pages. Hutchinson, London 1948 7s. 6d.

STEUER, ROBERT O. *Aetiological Principle of Pyaemia in Ancient Egyptian Medicine*. 42 pages. Johns Hopkins Press, Baltimore 1948 \$1.50

STEWARD, JULIAN HAYNES, Ed. *Handbook of South American Indians; vol. 4, The Circum-Caribbean Tribes*. 629 pages, ill., maps, diagrams. Government Printing Office, Washington, D. C. 1948 (Smithsonian Institution, Bureau of American Ethnology, Bulletin 143) \$3.50

TARN, WILLIAM WOODTHORPE. *Alexander the Great; vol. I, Narrative*. 171 pages. Macmillan, New York 1948 \$3.50

VON SIMSON, OTTO. *Sacred Fortress: Byzantine Art and Statecraft in Ravenna*. xv, 150 pages, 48 plates. University of Chicago Press, Chicago 1948 \$10.00

WELKER, MARIAN. *The Painted Pottery of the Near East in the Second Millennium B.C. and its Chronological Background*. Pages 185-245, map, 3 tables, 7 plates. American Philosophical Society, Philadelphia 1948 (Transactions of the American Philosophical Society, New Series, Volume 38.2) \$1.00

WELLESZ, E. J. *A History of Byzantine Music and Hymnology*. 400 pages, ill. Clarendon Press, London 1948 42s.

WISCHNITZER, RACHEL. *The Messianic Theme in the Paintings of the Dura Synagogue*. 135 pages. University of Chicago Press, Chicago 1948 \$6.00

WYLIE, J. KERR. *Roman Constitutional History from Earliest Times to the Death of Justinian*. 187 pages. P. D. and Ione Perkins, Pasadena 1948 \$3.75

YOUNG, ARTHUR M. *Troy and Her Legend*. xvi, 194 pages, ill. University of Pittsburgh Press, Pittsburgh 1948 \$3.50

* Reviewed above, page 55.

* Reviewed above, pages 42-46.

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